

OFFICE OF EDUCATION
SANITARY EJECTOR PUMPS AND SEWER
PIPE REPLACEMENT
DFCM PROJECT #05258200

DFCM DESIGN AND CODE CRITERIA

(Fee A.E: Attach and fill in applicable data for each drawing submittal)

Applicable Codes:
International Building Code
Planning & Design Criteria to Prevent
Architectural Barriers for the Aged and
the Physically Handicapped.

Year
2003
International Mechanical Code
International Plumbing Code
Ashrae/IES Energy Code
National Electrical Code
2003
90.1-1999-2003
2002

A. Occupancy and Group : B / S-1

EXISTING

Change in Use : Yes No ☒

Mixed Occupancy : Yes ☒ No

B. Type of Construction (Circle)

I F.R. II F.R. III 1 HR. IV B 1 HR. V N H.T. VI 1 HR. VII N

C. Location on Property : F.R. Ext. Walls (Hrs.):

N.R. Ext. Wall Opening(s) Protection (Hrs.) N.R.

Each Occupancy

D. Occupancy separation required (Hrs.):

EXISTING

Sprinklered: Indicate ☒ or No

Stories : 1 or ☒

a. Actual Area²(ft)

b. Basic allowable area :

c. Allowable Area Increase
due to side yards: N.A.

d. Side yard area increase (ft)
Accumulative sub-total (b=d):
Sprinkler: area increase (x3 single)
(x 2 multi)

e. Total Allowable Area for a single
story:
x 2 for multi-story building:
f. Ratio = a/e
(Actual divided by allowable)

E. Fire-Resistive Requirements (Hrs.): (1 Hr., 2Hr., 3Hr., 4Hr., N. H.T.)

Exterior Bearing Walls: N Floors - Ceiling Floors N

Interior Bearing Walls: N Roofs - Ceiling Roofs N

Exterior Non-bearing Walls: N Exterior Doors and Windows NR

Structural Frame: N Shaft Enclosures 1 HR

Partitions - Permanent: N

(OCCUPANCY SEPARATION - N.A.)



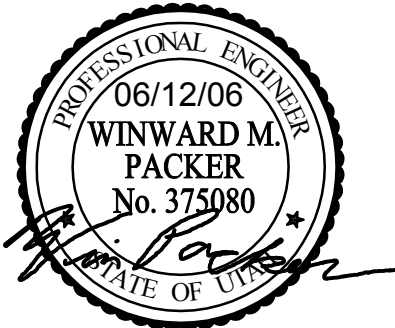
State of Utah—Department of Administrative Services

**DIVISION OF FACILITIES CONSTRUCTION
AND MANAGEMENT**

4110 State Office Building / Salt Lake City, Utah 84114 / 538-3018

DRAWING INDEX:	
G-000	TITLE SHEET
P-001	GENERAL PLUMBING NOTES AND LEGEND
PD-101	BASEMENT PIPING DEMOLITION PLAN
PD-102	MAIN FLOOR PIPING DEMOLITION PLAN
PD-103	SECOND FLOOR PIPING DEMOLITION PLAN
PD-401	LARGE SCALE EJECTOR ROOM DEMOLITION PLANS AND ELEVATIONS
PD-402	SEWAGE PIPING DEMOLITION DETAILS
PE-101	NEW PIPING BASEMENT PLAN
PE-102	NEW PIPING MAIN FLOOR PLAN
PE-103	NEW PIPING SECOND FLOOR PLAN
PE-401	LARGE SCALE EJECTOR ROOM PIPING PLANS AND SECTIONS
PE-501	SEWER PIPING AND ELECTRICAL DETAILS & SCHEDULES

MECHANICAL ENGINEER
WHW ENGINEERING, INC.
1354 EAST 3300 SOUTH
SUITE 200
SALT LAKE CITY, UTAH 84106
PHONE: (801) 466-4021 FAX: (801) 466-8536



**WHW
ENGINEERING INC.**
PROFESSIONAL MECHANICAL ENGINEERING
1354 East 3300 South Suite 200
SALT LAKE CITY, UTAH 84106
(801) 466-4021, FAX 466-8536
EMAIL: excellence@whw-engineering.com

D

C

B

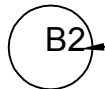
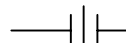
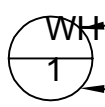







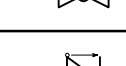

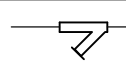


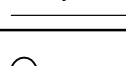
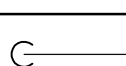
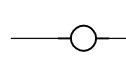
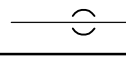
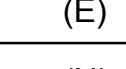
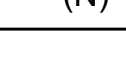
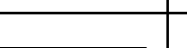
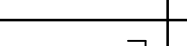
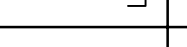
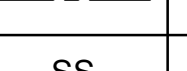
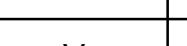
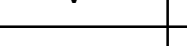


A

1

2

3

4

MECHANICAL LEGEND						
SYMBOL	ABR.	DESCRIPTION		SYMBOL	ABR.	DESCRIPTION
GENERAL TERMINOLOGY				WET SIDE CONTINUED		
		DETAIL NUMBER DESIGNATION				UNION
		MECHANICAL EQUIPMENT DESIGNATION EQUIPMENT ITEM DESIGNATION				MANUAL ACTUATOR (BALL, BUTTERFLY, NEEDLE, ETC. VALVES)
		REVISION DESIGNATOR AND NUMBER				MANUAL ACTUATOR (GATE, GLOBE, S&D, OS&Y, ETC. VALVES)
		KEY NOTE DESIGNATOR AND NUMBER				
	POC	POINT OF CONNECTION				GATE VALVE
	POR	POINT OF REMOVAL				GLOBE VALVE - STRAIGHT PATTERN
AFF		ABOVE FINISHED FLOOR				CHECK VALVE
MC		MECHANICAL CONTRACTOR			BV	BALL VALVE
CC		CONTROL CONTRACTOR				STRAINER
EC		ELECTRICAL CONTRACTOR				STRAINER W/ PLUGGED BLOW OFF
NIC		NOT IN CONTRACT				DIRECTION OF FLOW
NTS		NOT TO SCALE				PITCH DOWN
C		COMMON				ELBOW UP
NC		NORMALLY CLOSED				ELBOW DOWN
NO		NORMALLY OPEN				TEE UP
WET SIDE						TEE DOWN
				(E)		EXISTING
				(N)		NEW
		EXISTING PIPING TO BE REMOVED				
		EXISTING PIPING TO REMAIN				
		NEW PIPING				
		PIPE CAP OR PLUG				
		CULINARY COLD WATER				
	SS	SANITARY SEWER				
	V	VENT PIPING				
	F	FIRE LINE				

GENERAL NOTES:

G-1 PLUMBING INFORMATION IS NOT LIMITED TO THE DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR INFORMATION FROM DFCM STANDARDS AND SPECIFICATIONS.

A - DRAWINGS AND SPECIFICATIONS HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER AND THEY SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH ITEMS SHOWN AND NOTED ON ONE AND NOT THE OTHER BEING FURNISHED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN ALL PLACES. ITEMS IN SPECIFICATIONS OR DRAWINGS LISTED WHICH ARE DIFFERING IN EFFICIENCY OR QUALITY SHALL BE HELD TO THE GREATEST OF: EFFICIENCY, QUALITY OR GOVERNING CODE.

B - THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE INSTALLATION OF THE SYSTEMS ACCORDING TO THE TRUE INTENT AND MEANING OF THE CONTRACT DOCUMENTS.

C - THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT WITH PROPER SERVICE ACCESS AND CLEARANCES ACCORDING TO MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR SHALL REVIEW SUPPLIERS BID PACKAGES FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS, SCHEDULES, AND DESIGN INTENT (ALL EQUIPMENT AND METHODS). THE CONTRACTOR SHALL REMOVE AND REINSTALL CORRECTLY AT HIS OWN EXPENSE ANY EQUIPMENT NOT IN COMPLIANCE.

D - THE CONTRACTOR SHALL CONSULT MANUFACTURERS INSTALLATION INSTRUCTIONS FOR SIZES, METHODS, ACCESSORIES, AND CLEARANCES IN SPACE AVAILABLE PRIOR TO BIDDING PROJECT.

E - ANYTHING NOT CLEAR OR IN CONFLICT WILL BE EXPLAINED BY MAKING APPLICATION TO THE ENGINEER IN WRITING.

G-2 ANY AND ALL ALTERATIONS TO THE SYSTEM SHOWN SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR. ENGINEER SHALL BE NOTIFIED IN WRITING PRIOR TO CHANGES.

G-3 CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATIONS.

G-4 THE WORKING DRAWINGS ARE DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND, OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR PLUMBING EQUIPMENT AND PIPING SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL DRAWINGS.

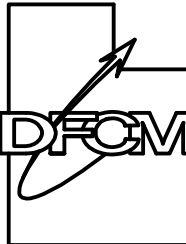
G-5 THE INSTRUCTION TO "PROVIDE" ALSO INCLUDES INSTALLATION.

G-6 SUPPLIERS SHALL REVIEW ALL DRAWINGS AND THE SPECIFICATIONS PRIOR TO SUBMITTING PRICES TO THE CONTRACTOR. ALL QUESTIONS AND DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BIDDING.

G-7 CONTRACTOR SHALL THOROUGHLY REVIEW AND SIGN SUBMITTALS FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS PRIOR TO ENGINEERS REVIEW. SUPPLIERS SHALL HIGHLIGHT OR MARK ALL INFORMATION REQUIRED TO SHOW COMPLIANCE TO THE SPECIFICATIONS. ALL REQUESTED EXCEPTIONS TO THE SPECIFICATIONS, OR SCHEDULES SHALL BE CLEARLY NOTED AND EXPLAINED. SUBMITTAL REVIEW AND ACCEPTANCE IS FOR DESIGN CONCEPT ONLY, AND DOES NOT AT ANY TIME RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO MEET SPECIFICATIONS, CAPACITIES, OR DESIGN INTENT.

G-8 ALL MECHANICAL SHALL BE INSTALLED AND CONFORM TO THE 2003 EDITION OF THE IMC AND IPC WITH UTAH ANNOTATIONS.

State of Utah
Department of Administrative Services



Division of Facilities
Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
Phone: (801) 538 - 3018
Fax: (801) 538 - 3267

Internet: <http://www.dfcml.state.ut.us>

CONSULTANTS



WHW
ENGINEERING INC.
PROFESSIONAL MECHANICAL ENGINEERING
1354 East 3300 South Suite 200
SALT LAKE CITY, UTAH 84106
(801)466-4021, FAX 466-5536
EMAIL: excellence@whw-engineering.com

COPYRIGHT NOTICE

ALL RIGHTS RESERVED ©
WHW ENGINEERING, INC.
These documents are protected under the United States 1978 copyright act. It is an exclusive work of original authorship. None of the pictorial, graphic, or technical charts or drawings depicted may be reproduced by any method, mechanical, electronic, or otherwise; nor may they be used or re-used for any purpose without the express prior written permission of WHW Engineering, Inc.

PROJECT NAME & ADDRESS

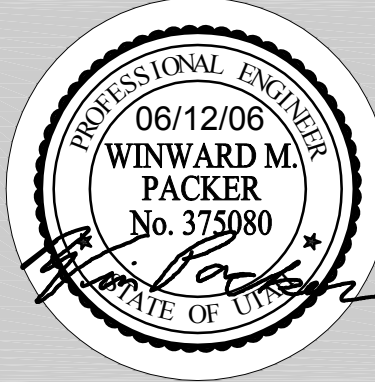
**OFFICE OF EDUCATION
SANITARY EJECTOR
PUMPS & SEWER
PIPE REPLACEMENT**

DFCM No. 05258200

S.L.C., UTAH

MARK	DATE	REVISION

PROJECT MANAGER:
SLW
DRAWN BY:
STAFF
CHECKED BY:
SLW
DATE:
06/12/06
WHW JOB NO.:
05066
SHEET TITLE



GENERAL PLUMBING NOTES
AND LEGEND

SHEET NO.

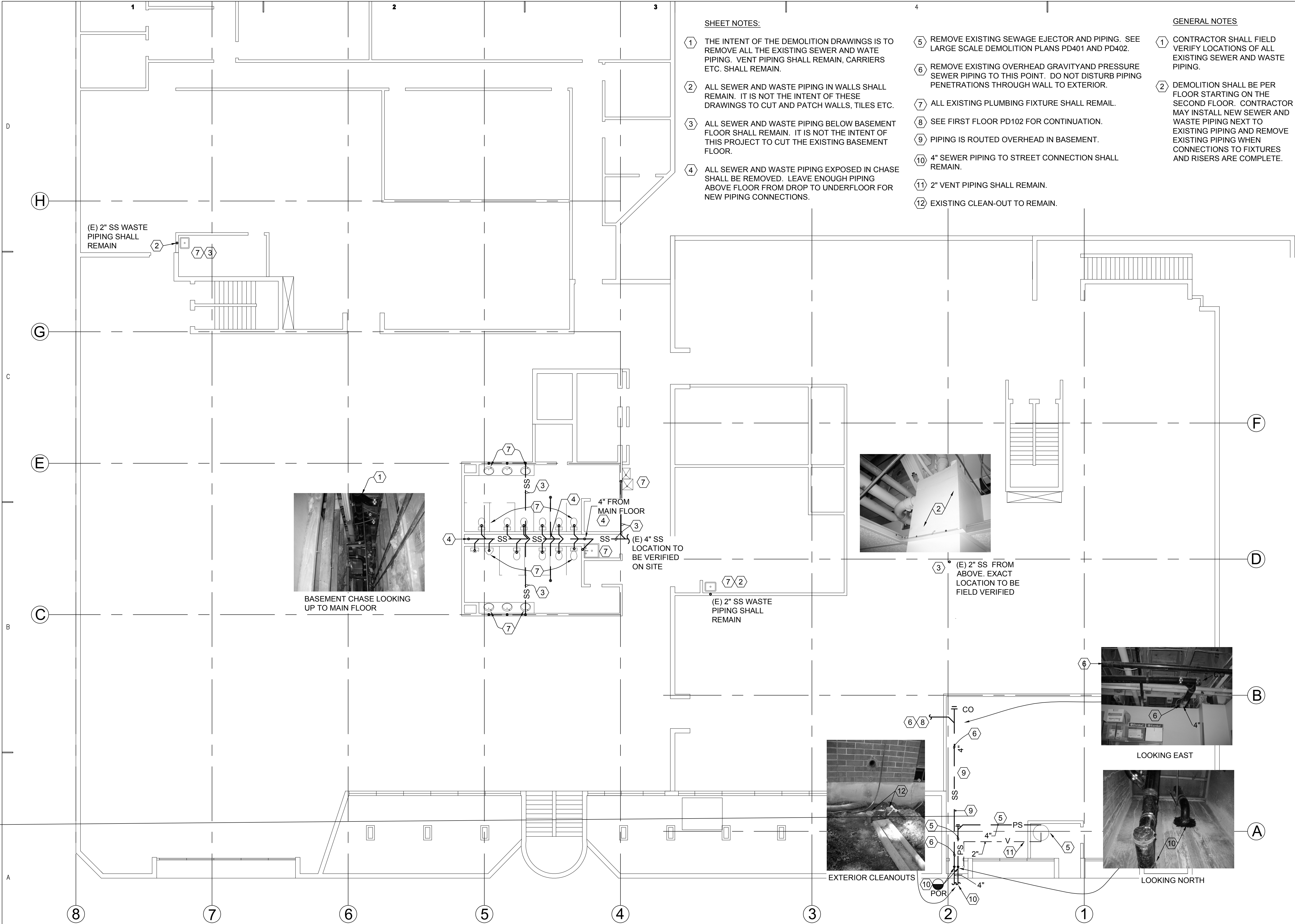
P001

1

2

3

4



SHEET NOTES:

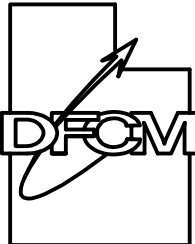
- 1 THE INTENT OF THE DEMOLITION DRAWINGS IS TO REMOVE ALL THE EXISTING SEWER AND WASTE PIPING. VENT PIPING SHALL REMAIN, CARRIERS ETC. SHALL REMAIN.
- 2 ALL SEWER AND WASTE PIPING IN WALLS SHALL REMAIN. IT IS NOT THE INTENT OF THESE DRAWINGS TO CUT AND PATCH WALLS, TILES ETC.
- 3 ALL SEWER AND WASTE PIPING BELOW BASEMENT FLOOR SHALL REMAIN. IT IS NOT THE INTENT OF THIS PROJECT TO CUT THE EXISTING BASEMENT FLOOR.
- 4 ALL SEWER AND WASTE PIPING EXPOSED IN CHASE SHALL BE REMOVED. LEAVE ENOUGH PIPING ABOVE FLOOR FROM DROP TO UNDERFLOOR FOR NEW PIPING CONNECTIONS.

- 5 REMOVE EXISTING SEWAGE EJECTOR AND PIPING. SEE LARGE SCALE DEMOLITION PLANS PD401 AND PD402.
- 6 REMOVE EXISTING OVERHEAD GRAVITY AND PRESSURE SEWER PIPING TO THIS POINT. DO NOT DISTURB PIPING PENETRATIONS THROUGH WALL TO EXTERIOR.
- 7 ALL EXISTING PLUMBING FIXTURE SHALL REMAIN.
- 8 SEE FIRST FLOOR PD102 FOR CONTINUATION.
- 9 PIPING IS ROUTED OVERHEAD IN BASEMENT.
- 10 4" SEWER PIPING TO STREET CONNECTION SHALL REMAIN.
- 11 2" VENT PIPING SHALL REMAIN.
- 12 EXISTING CLEAN-OUT TO REMAIN.

GENERAL NOTES

- 1 CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL EXISTING SEWER AND WASTE PIPING.
- 2 DEMOLITION SHALL BE PER FLOOR STARTING ON THE SECOND FLOOR. CONTRACTOR MAY INSTALL NEW SEWER AND WASTE PIPING NEXT TO EXISTING PIPING AND REMOVE EXISTING PIPING WHEN CONNECTIONS TO FIXTURES AND RISERS ARE COMPLETE.

State of Utah
Department of Administrative Services



Division of Facilities
Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
Phone: (801) 538 - 3018
Fax: (801) 538 - 3267

Internet: <http://www.dfcmm.state.ut.us>

CONSULTANTS



WHW
ENGINEERING INC.
PROFESSIONAL MECHANICAL ENGINEERING
1354 East 3300 South Suite 200
SALT LAKE CITY, UTAH 84106
(801) 486-4021, FAX: 486-8536
EMAIL: excellence@whw-engineering.com

COPYRIGHT NOTICE

ALL RIGHTS RESERVED ©
WHW ENGINEERING, INC.
These documents are protected under the United States 1978 copyright act. It is an exclusive work of original authorship. None of the pictorial, graphic, or technical charts or drawings depicted may be reproduced by any method, mechanical, electronic, or otherwise; nor may they be used or re-used for any purpose without the express prior written permission of WHW Engineering, Inc.

PROJECT NAME & ADDRESS

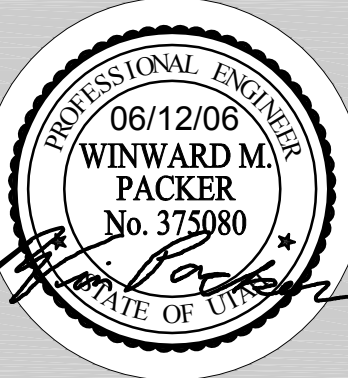
**OFFICE OF EDUCATION
SANITARY EJECTOR
PUMPS & SEWER
PIPE REPLACEMENT**

DFCM No. 05258200

S.L.C., UTAH

MARK	DATE	REVISION

PROJECT MANAGER:
SLW
DRAWN BY:
STAFF
CHECKED BY:
SLW
DATE:
06/12/06
WHW JOB NO.:
05066

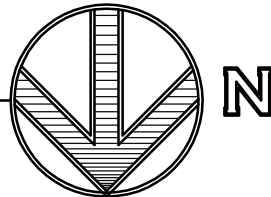


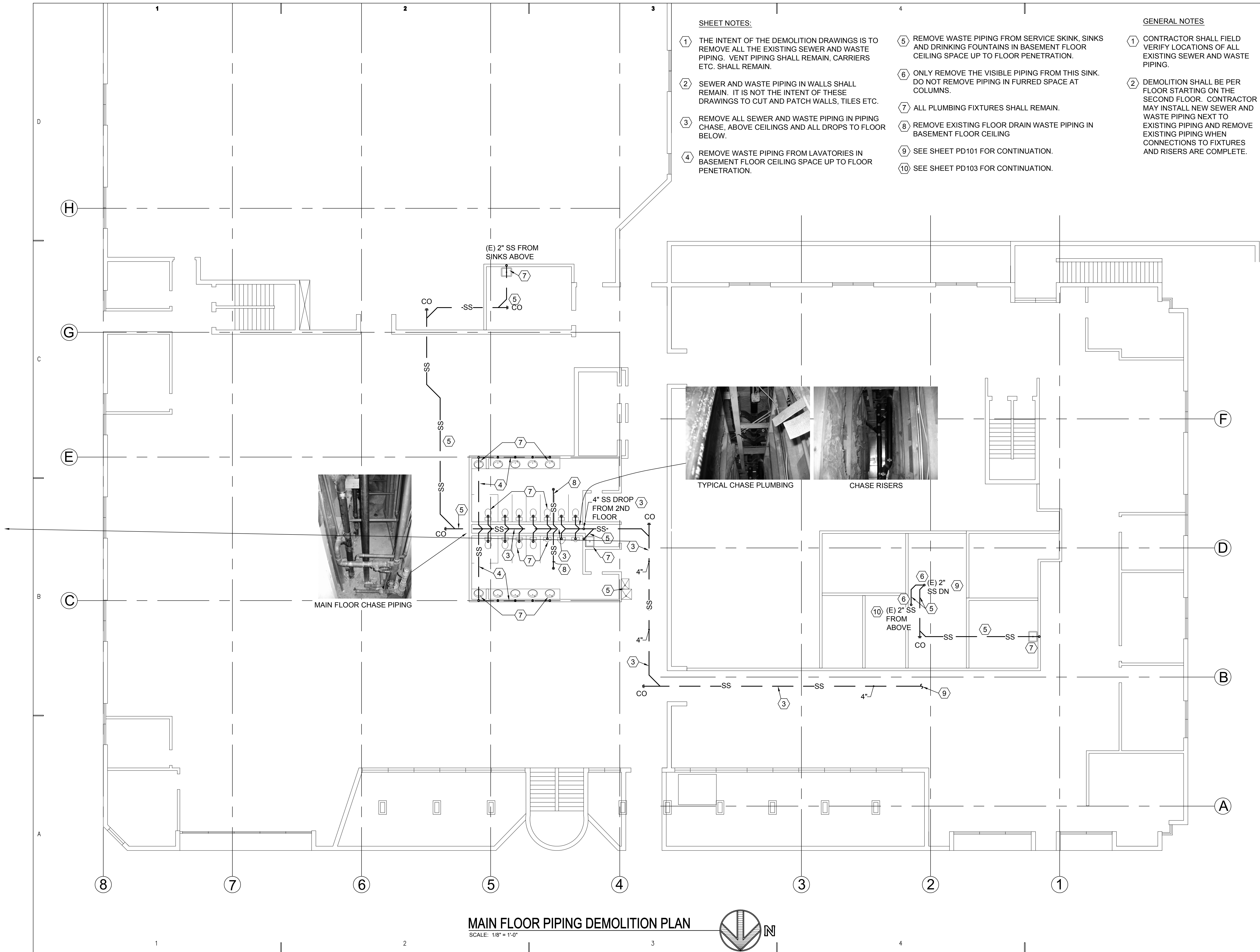
SHEET TITLE
**BASEMENT PIPING
DEMOLITION PLAN**

SHEET NO.
PD101

BASEMENT PIPING DEMOLITION PLAN

SCALE: 1/8" = 1'-0"





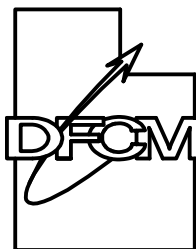
SHEET NOTES:

- 1 THE INTENT OF THE DEMOLITION DRAWINGS IS TO REMOVE ALL THE EXISTING SEWER AND WASTE PIPING. VENT PIPING SHALL REMAIN, CARRIERS ETC. SHALL REMAIN.
- 2 SEWER AND WASTE PIPING IN WALLS SHALL REMAIN. IT IS NOT THE INTENT OF THESE DRAWINGS TO CUT AND PATCH WALLS, TILES ETC.
- 3 REMOVE ALL SEWER AND WASTE PIPING IN PIPING CHASE, ABOVE CEILINGS AND ALL DROPS TO FLOOR BELOW.
- 4 REMOVE WASTE PIPING FROM LAVATORIES IN BASEMENT FLOOR CEILING SPACE UP TO FLOOR PENETRATION.
- 5 REMOVE WASTE PIPING FROM SERVICE SKINK, SINKS AND DRINKING FOUNTAINS IN BASEMENT FLOOR CEILING SPACE UP TO FLOOR PENETRATION.
- 6 ONLY REMOVE THE VISIBLE PIPING FROM THIS SINK. DO NOT REMOVE PIPING IN FURRED SPACE AT COLUMNS.
- 7 ALL PLUMBING FIXTURES SHALL REMAIN.
- 8 REMOVE EXISTING FLOOR DRAIN WASTE PIPING IN BASEMENT FLOOR CEILING
- 9 SEE SHEET PD101 FOR CONTINUATION.
- 10 SEE SHEET PD103 FOR CONTINUATION.

GENERAL NOTES

- 1 CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL EXISTING SEWER AND WASTE PIPING.
- 2 DEMOLITION SHALL BE PER FLOOR STARTING ON THE SECOND FLOOR. CONTRACTOR MAY INSTALL NEW SEWER AND WASTE PIPING NEXT TO EXISTING PIPING AND REMOVE EXISTING PIPING WHEN CONNECTIONS TO FIXTURES AND RISERS ARE COMPLETE.

State of Utah
Department of Administrative Services



Division of Facilities
Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
Phone: (801) 538 - 3018
Fax: (801) 538 - 3267

Internet: <http://www.dfcu.state.ut.us>

CONSULTANTS



**WHW
ENGINEERING INC.**
PROFESSIONAL MECHANICAL ENGINEERING
1354 East 3300 South Suite 200
SALT LAKE CITY, UTAH 84106
(801)466-4021, FAX: 466-6536
EMAIL: excellence@whw-engineering.com

COPYRIGHT NOTICE

ALL RIGHTS RESERVED ©
WHW ENGINEERING, INC.
These documents are protected under the United States 1978 copyright act. It is an exclusive work of original authorship. None of the pictorial, graphic, or technical charts or drawings depicted may be reproduced by any method, mechanical, electronic, or otherwise; nor may they be used or re-used for any purpose without the express prior written permission of WHW Engineering, Inc.

PROJECT NAME & ADDRESS

**OFFICE OF EDUCATION
SANITARY EJECTOR
PUMPS & SEWER
PIPE REPLACEMENT**

DFCM No. 05258200

S.L.C., UTAH

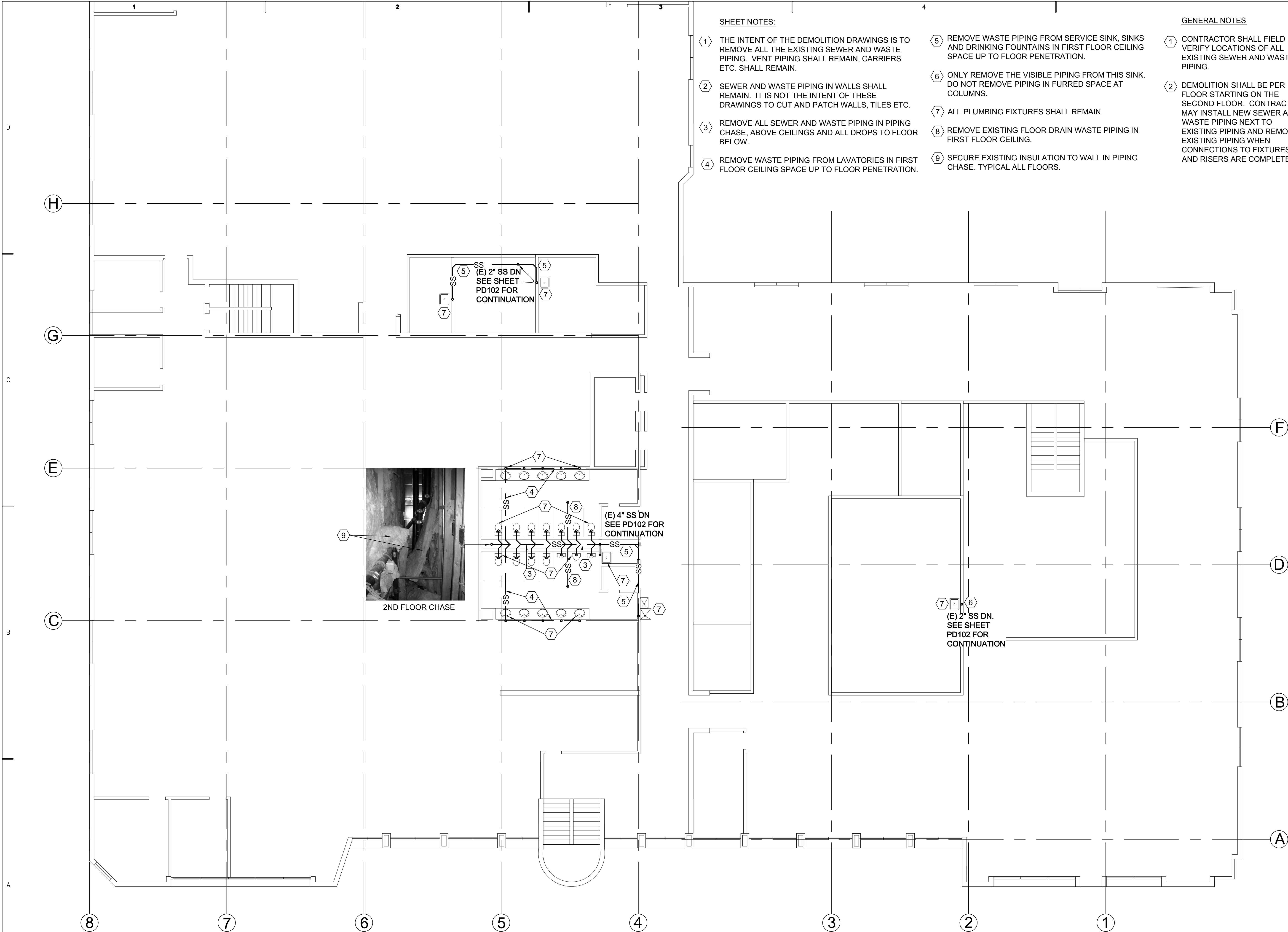
MARK	DATE	REVISION

PROJECT MANAGER:
SLW
DRAWN BY:
STAFF
CHECKED BY:
SLW
DATE:
06/12/06
WHW JOB NO.:
05066



SHEET TITLE
**MAIN FLOOR PIPING
DEMOLITION PLAN**

SHEET NO.
PD102



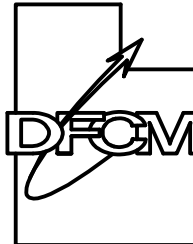
SHEET NOTES:

- 1 THE INTENT OF THE DEMOLITION DRAWINGS IS TO REMOVE ALL THE EXISTING SEWER AND WASTE PIPING. VENT PIPING SHALL REMAIN, CARRIERS ETC. SHALL REMAIN.
- 2 SEWER AND WASTE PIPING IN WALLS SHALL REMAIN. IT IS NOT THE INTENT OF THESE DRAWINGS TO CUT AND PATCH WALLS, TILES ETC.
- 3 REMOVE ALL SEWER AND WASTE PIPING IN PIPING CHASE, ABOVE CEILINGS AND ALL DROPS TO FLOOR BELOW.
- 4 REMOVE WASTE PIPING FROM LAVATORIES IN FIRST FLOOR CEILING SPACE UP TO FLOOR PENETRATION.
- 5 REMOVE WASTE PIPING FROM SERVICE SINK, SINKS AND DRINKING FOUNTAINS IN FIRST FLOOR CEILING SPACE UP TO FLOOR PENETRATION.
- 6 ONLY REMOVE THE VISIBLE PIPING FROM THIS SINK. DO NOT REMOVE PIPING IN FURRED SPACE AT COLUMNS.
- 7 ALL PLUMBING FIXTURES SHALL REMAIN.
- 8 REMOVE EXISTING FLOOR DRAIN WASTE PIPING IN FIRST FLOOR CEILING.
- 9 SECURE EXISTING INSULATION TO WALL IN PIPING CHASE. TYPICAL ALL FLOORS.

GENERAL NOTES

- 1 CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL EXISTING SEWER AND WASTE PIPING.
- 2 DEMOLITION SHALL BE PER FLOOR STARTING ON THE SECOND FLOOR. CONTRACTOR MAY INSTALL NEW SEWER AND WASTE PIPING NEXT TO EXISTING PIPING AND REMOVE EXISTING PIPING WHEN CONNECTIONS TO FIXTURES AND RISERS ARE COMPLETE.

State of Utah
Department of Administrative Services



Division of Facilities
Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
Phone: (801) 538 - 3018
Fax: (801) 538 - 3267

Internet: <http://www.dfcu.state.ut.us>

CONSULTANTS



WHW
ENGINEERING INC.
PROFESSIONAL MECHANICAL ENGINEERING
1354 East 3300 South Suite 200
SALT LAKE CITY, UTAH 84106
(801) 466-4021, FAX 466-5536
EMAIL: excellence@whw-engineering.com

COPYRIGHT NOTICE

ALL RIGHTS RESERVED ©
WHW ENGINEERING, INC.
These documents are protected under the United States 1978 copyright act. It is an exclusive work of original authorship. None of the pictorial, graphic, or technical charts or drawings depicted may be reproduced by any method, mechanical, electronic, or otherwise; nor may they be used or re-used for any purpose without the express prior written permission of WHW Engineering, Inc.

PROJECT NAME & ADDRESS

**OFFICE OF EDUCATION
SANITARY EJECTOR
PUMPS & SEWER
PIPE REPLACEMENT**

DFCM No. 05258200

S.L.C., UTAH

MARK	DATE	REVISION

PROJECT MANAGER:

SLW

DRAWN BY:

STAFF

CHECKED BY:

SLW

DATE:

06/12/06

WHW JOB NO.:

05066

SHEET TITLE

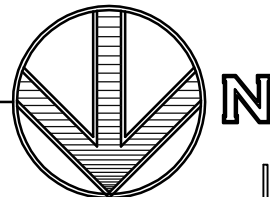
SECOND FLOOR PIPING
DEMOLITION PLAN

SHEET NO.

PD103

SECOND FLOOR PIPING DEMOLITION PLAN

SCALE: 1/8" = 1'-0"



SHEET NOTES

- 1

REMOVE EXISTING SEWAGE EJECTOR PUMPS, COVER, CONTROLS, ELECTRICAL, PIPING ETC.
- 2

EXISTING FIRE PROTECTION PIPING RISERS, PIPING ETC. SHALL REMAIN. PROTECT DURING CONSTRUCTION.
- 3

EXISTING CULINARY WATER PRV STATION SHALL REMAIN. PROTECT DURING CONSTRUCTION.
- 4

EXISTING DISCONNECT SHALL REMAIN.
- 5

REMOVE EXISTING 4" PUMPED SEWER PIPING, AND BACKFLOW VALVES. SEE A1/MD402..
- 6

REMOVE EXISTING FLEX CONDUIT AND WIRING.
- 7

REMOVE EXISTING 2" VENT PIPING.
- 8

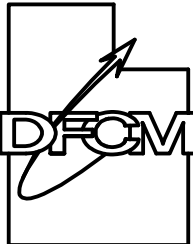
EXISTING SUMP SHALL REMAIN.
- 9

REMOVE EXISTING SEWAGE PUMP STARTERS.
- 10

CULINARY WATER SUPPLY TO PRV STATION SHALL REMAIN.
- 11

EXISTING POWER SUPPLY FROM FLOOR SHALL REMAIN.

State of Utah
Department of Administrative Services



Division of Facilities
Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
Phone: (801) 538 - 3018
Fax: (801) 538 - 3267

Internet: <http://www.dfcu.state.ut.us>

CONSULTANTS



WHW
ENGINEERING INC.
PROFESSIONAL MECHANICAL ENGINEERING
1354 East 3300 South Suite 200
SALT LAKE CITY, UTAH 84106
(801)466-4021, FAX 466-5536
EMAIL: excellence@whw-engineering.com

COPYRIGHT NOTICE

ALL RIGHTS RESERVED ©
WHW ENGINEERING, INC.
These documents are protected under the United States 1978 copyright act. It is an exclusive work of original authorship. None of the pictorial, graphic, or technical charts or drawings depicted may be reproduced by any method, mechanical, electronic, or otherwise; nor may they be used or re-used for any purpose without the express prior written permission of WHW Engineering, Inc.

PROJECT NAME & ADDRESS

**OFFICE OF EDUCATION
SANITARY EJECTOR
PUMPS & SEWER
PIPE REPLACEMENT**

DFCM No. 05258200

S.L.C., UTAH

MARK	DATE	REVISION
------	------	----------

PROJECT MANAGER:

SLW

DRAWN BY:

STAFF

CHECKED BY:

SLW

DATE:

06/12/06

WHW JOB NO.:

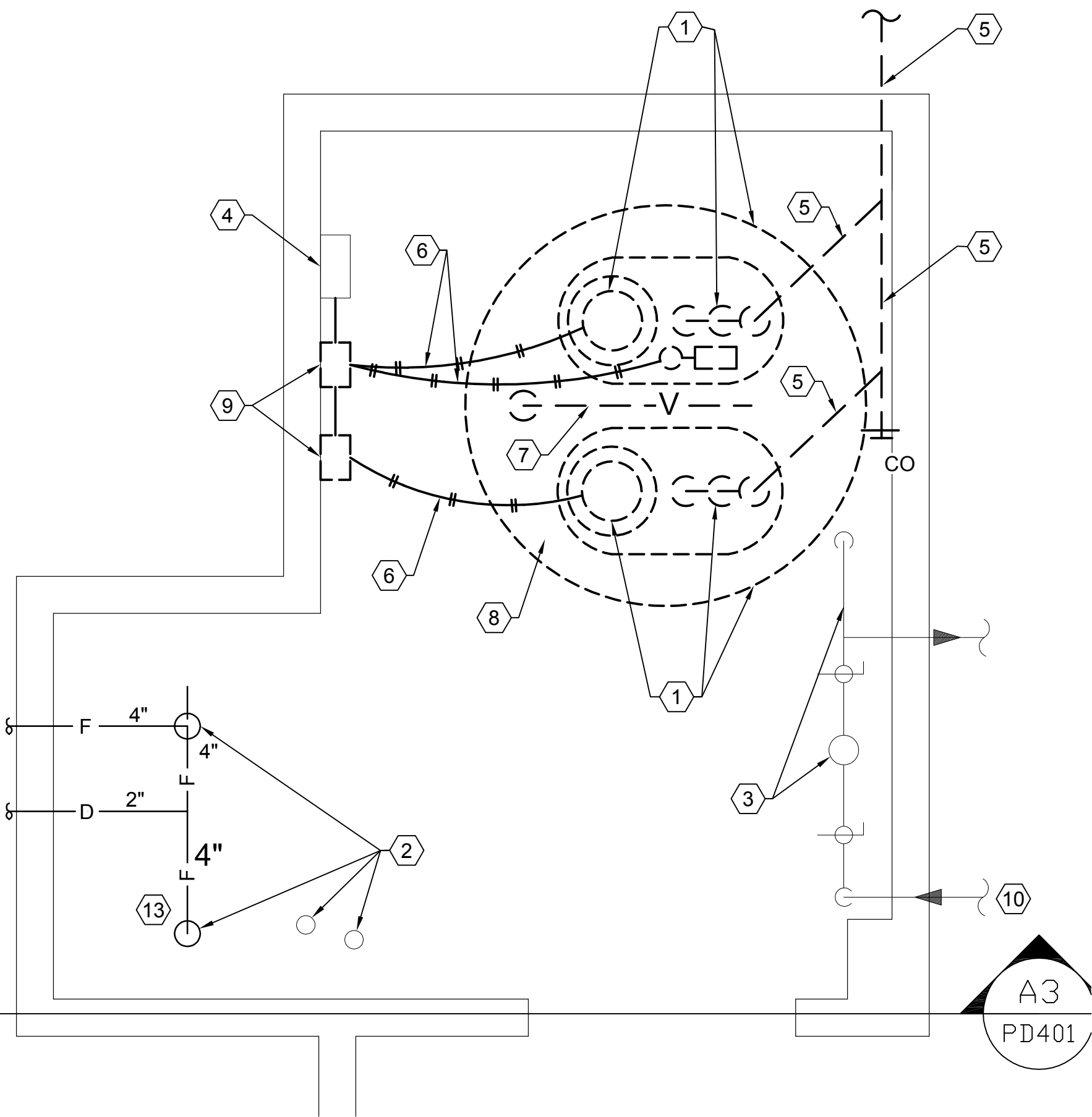
05066

SHEET TITLE

LARGE SCALE EJECTOR
ROOM DEMOLITION PLANS
AND ELEVATION

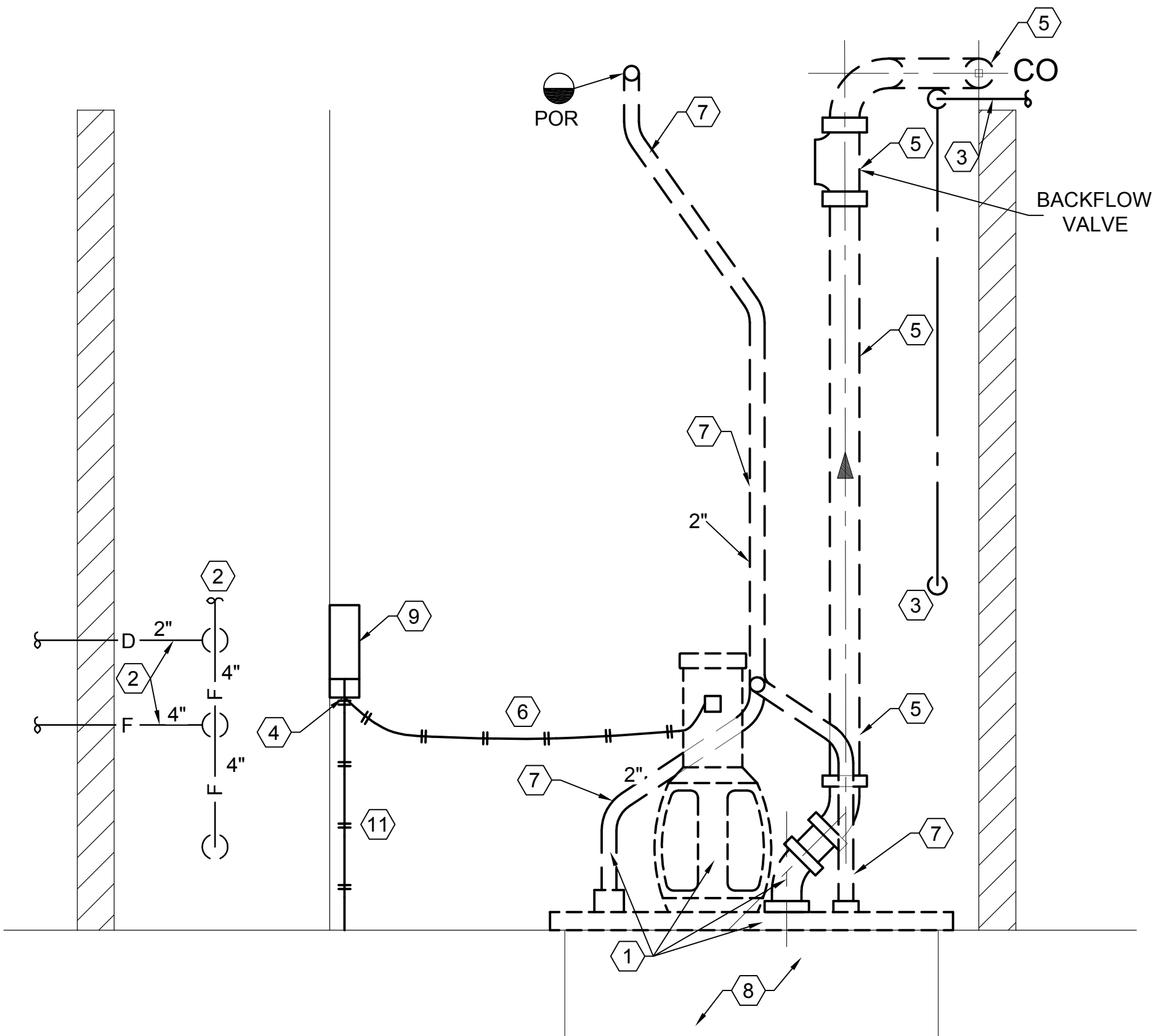
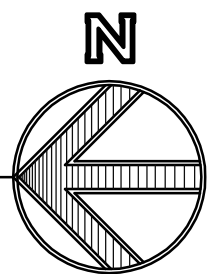
SHEET NO.

PD401



B1 BASEMENT EJECTOR ROOM PIPING DEMOLITION PLAN

SCALE: 3/4" = 1'-0"

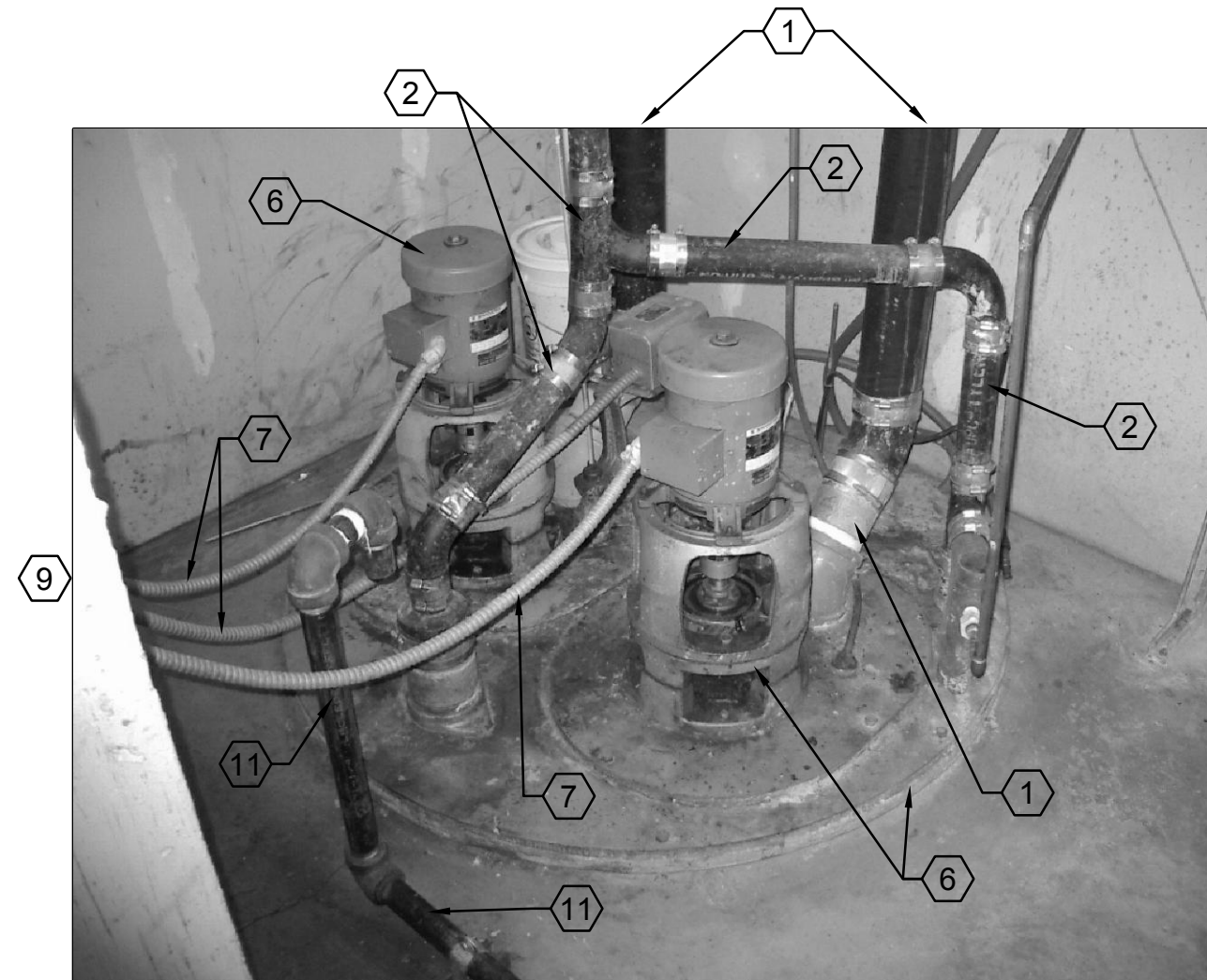


**A3 BASEMENT EJECTOR ROOM
PIPING DEMOLITION ELEVATION-LOOKING EAST**

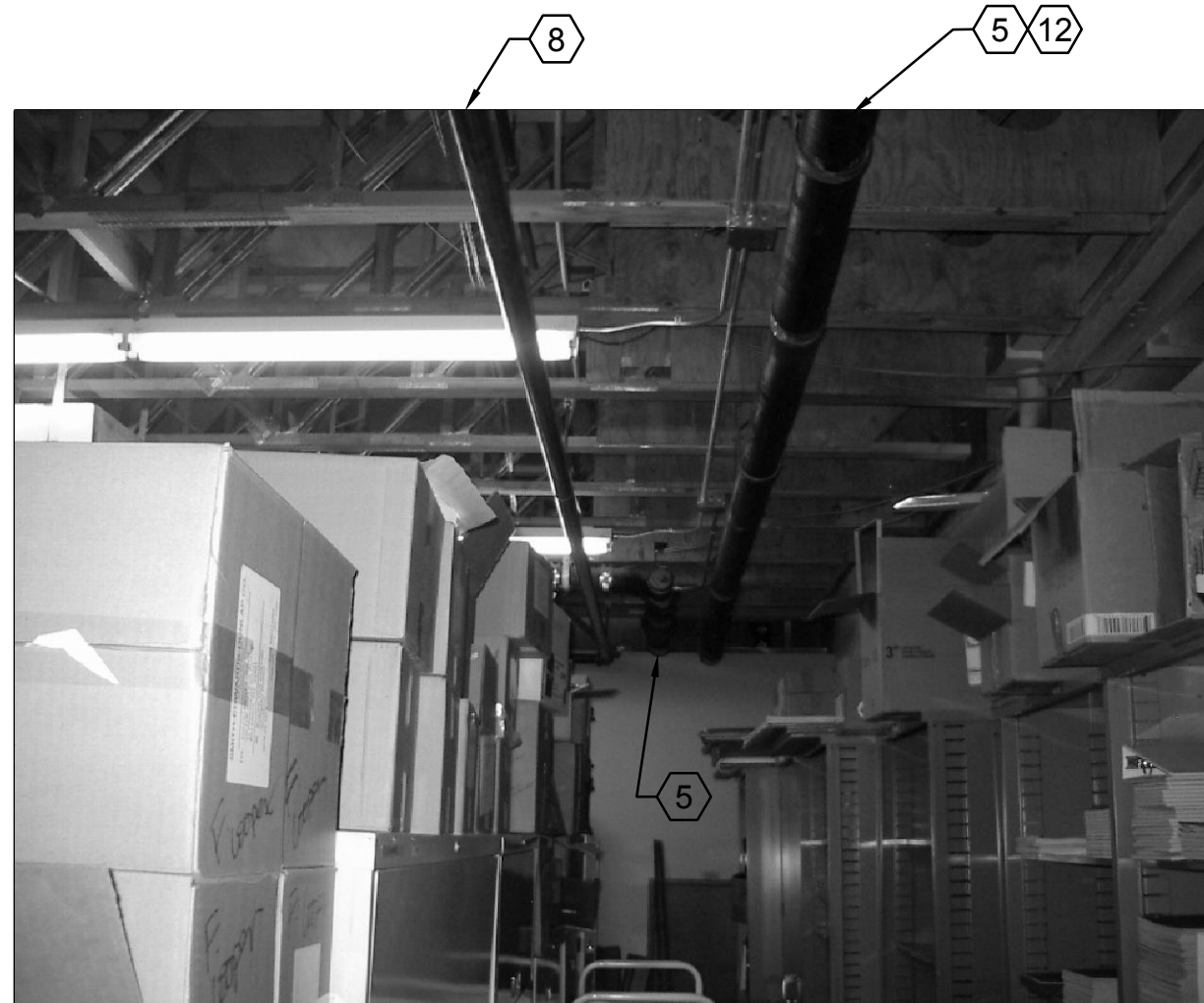
SCALE: 3/4" = 1'-0"



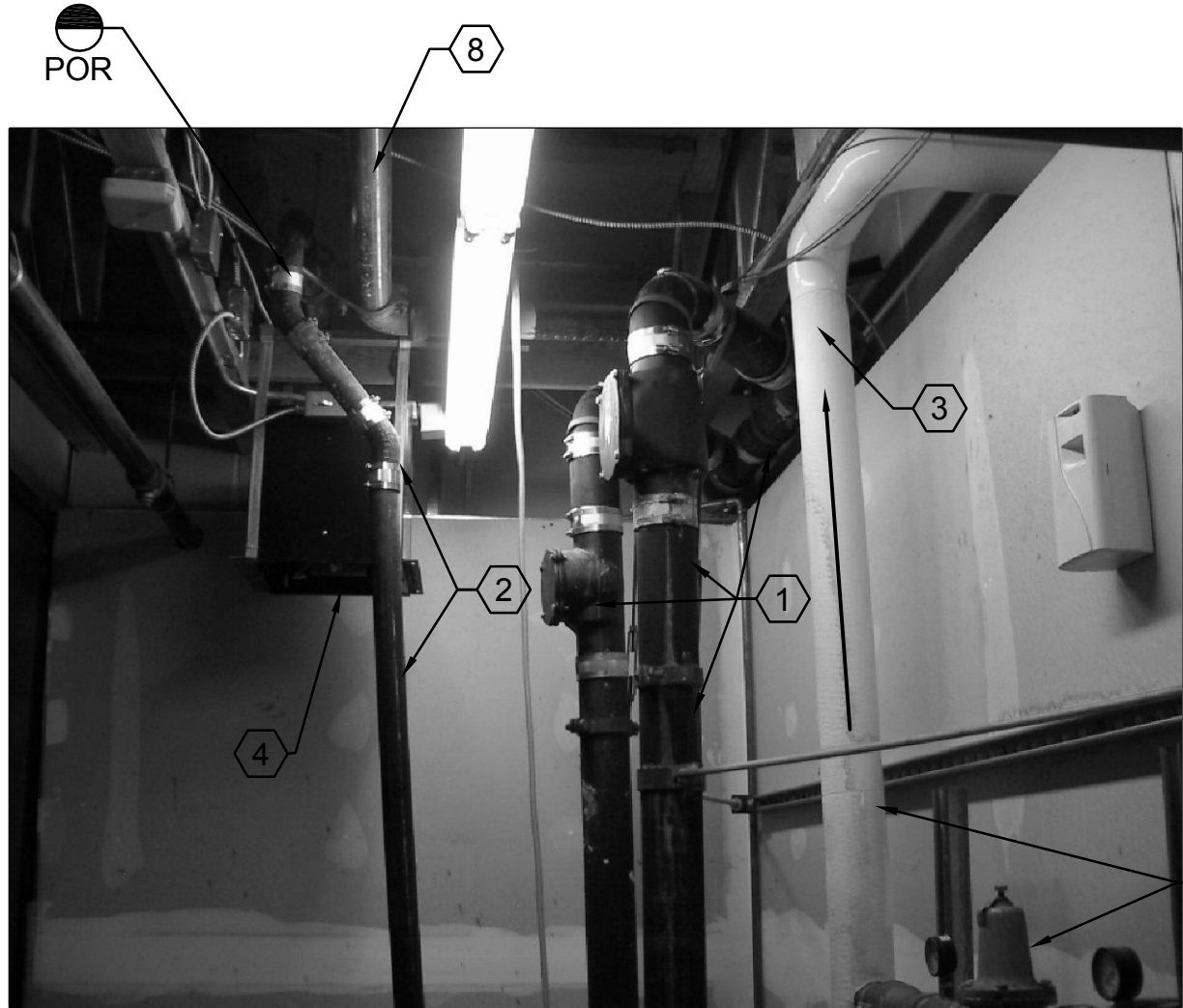
D1 SEWAGE EJECTOR PUMP DEMOLITION
SCALE: NONE



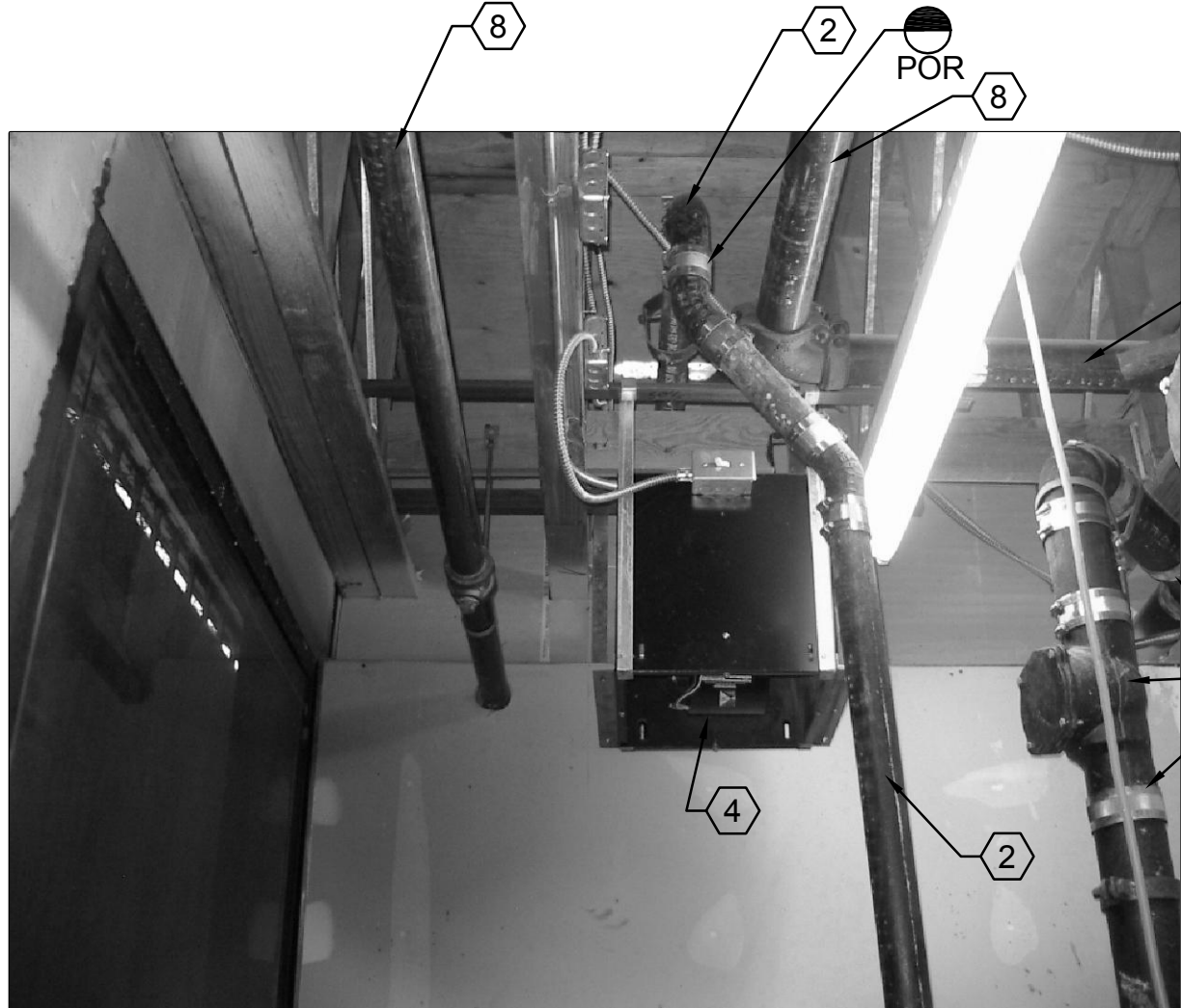
C1 SEWAGE EJECTOR PUMP, PIPING, AND CONTROLS
SCALE: NONE



A1 BASEMENT AREA-LOOKING NORTH
SCALE: NONE



D3 SEWAGE EJECTOR PUMPED PIPING-LOOKING EAST
SCALE: NONE



C3 SEWAGE EJECTOR ROOM-LOOKING EAST
SCALE: NONE

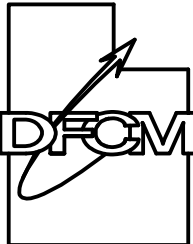


A3 BASEMENT AREA-LOOKING EAST
SCALE: NONE

SHEET NOTES

- 1 REMOVE EXISTING 4" C.I. SEWER PUMPED PIPING INCLUDING BACK FLOW VALVES.
- 2 REMOVE EXISTING 2" C.I. VENT PIPING TO POINT SHOWN.
- 3 EXISTING CULINARY PRV STATION AND PIPING SHALL REMAIN. PROTECT DURING CONSTRUCTION.
- 4 EXISTING EXHAUST FAN SHALL REMAIN.
- 5 REMOVE EXISTING GRAVITY AND PUMPED SEWER PIPING IN BASEMENT.
- 6 REMOVE EXISTING SUMP COVER, PUMPS, PIPING, CONTROLS, ETC.
- 7 REMOVE EXISTING FLEX CONDUIT TO EXISTING PUMPS AND CONTROLS.
- 8 FIRE PROTECTION PIPING SHALL REMAIN.
- 9 REMOVE EXISTING STARTERS, DISCONNECT SHALL REMAIN.
- 10 POWER WIRING AND CONDUIT TO DISCONNECT SHALL REMAIN.
- 11 FIRE RISER DRAIN PIPING SHALL BE REMOVED DURING CONSTRUCTION AND REPLACED AFTER NEW EJECTOR INSTALLATION.
- 12 SEE A3 THIS SHEET FOR CONTINUATION.
- 13 SEE A1 THIS SHEET FOR CONTINUATION.

State of Utah
Department of Administrative Services



Division of Facilities
Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
Phone: (801) 538 - 3018
Fax: (801) 538 - 3267

Internet: <http://www.dfc.state.ut.us>

CONSULTANTS



WHW
ENGINEERING INC.
PROFESSIONAL MECHANICAL ENGINEERING
1354 East 3300 South Suite 200
SALT LAKE CITY, UTAH 84106
(801) 466-4021, FAX 466-5536
EMAIL: excellence@whw-engineering.com

COPYRIGHT NOTICE

ALL RIGHTS RESERVED ©
WHW ENGINEERING, INC.
These documents are protected under the United States 1978 copyright act. It is an exclusive work of original authorship. None of the pictorial, graphic, or technical charts or drawings depicted may be reproduced by any method, mechanical, electronic, or otherwise; nor may they be used or re-used for any purpose without the express prior written permission of WHW Engineering, Inc.

PROJECT NAME & ADDRESS

**OFFICE OF EDUCATION
SANITARY EJECTOR
PUMPS & SEWER
PIPE REPLACEMENT**

DFCM No. 05258200

S.L.C., UTAH

MARK	DATE	REVISION

PROJECT MANAGER:

SLW

DRAWN BY:

STAFF

CHECKED BY:

SLW

DATE:

06/12/06

WHW JOB NO.:

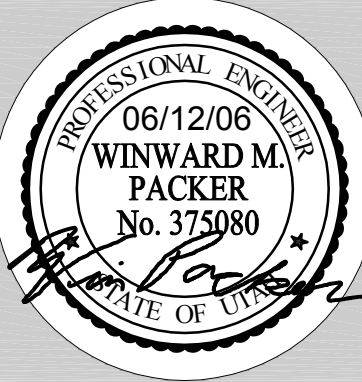
05066

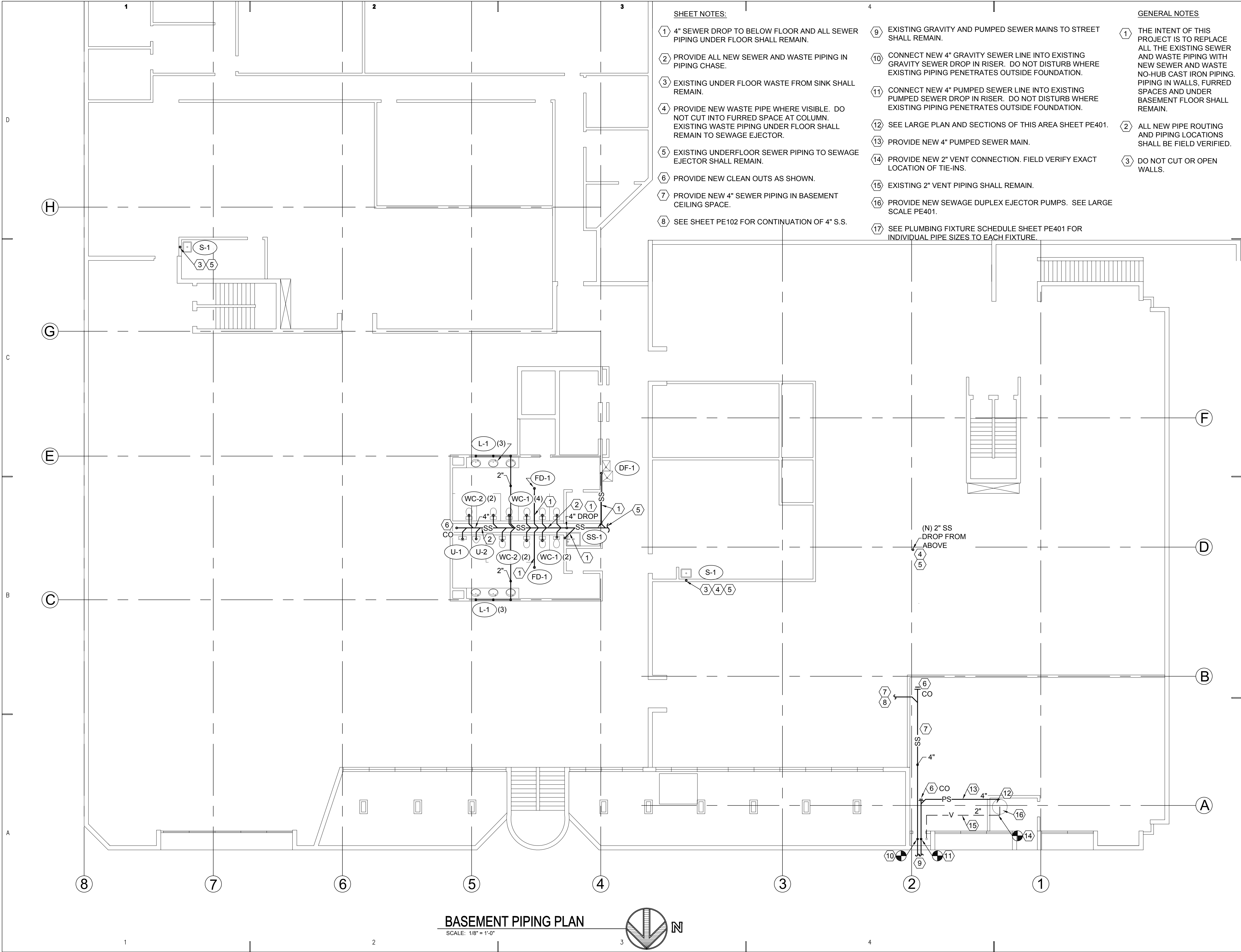
SHEET TITLE

SEWAGE PIPING
DEMOLITION DETAILS

SHEET NO.

PD402





State of Utah
Department of Administrative Services

DFCM

Division of Facilities
Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
Phone: (801) 538 - 3018
Fax: (801) 538 - 3267

Internet: <http://www.dfc.state.ut.us>

CONSULTANTS

W

WHW
ENGINEERING INC.
PROFESSIONAL MECHANICAL ENGINEERING
1354 East 3300 South Suite 200
SALT LAKE CITY, UTAH 84106
(801)466-4021, FAX 466-5536
EMAIL: excellence@whw-engineering.com

COPYRIGHT NOTICE

ALL RIGHTS RESERVED ©
WHW ENGINEERING, INC.
These documents are protected under the United States 1978
copyright act. It is an exclusive work of original authorship.
None of the pictorial, graphic, or technical charts or
drawings depicted may be reproduced by any method,
mechanical, electronic, or otherwise; nor may they be used
or re-used for any purpose without the express prior written
permission of WHW Engineering, Inc.

PROJECT NAME & ADDRESS

OFFICE OF EDUCATION
SANITARY EJECTOR
PUMPS & SEWER
PIPE REPLACEMENT

DFCM No. 05258200

S.L.C., UTAH

MARK	DATE	REVISION

PROJECT MANAGER:
SLW

DRAWN BY:
STAFF

CHECKED BY:
SLW

DATE:
06/12/06

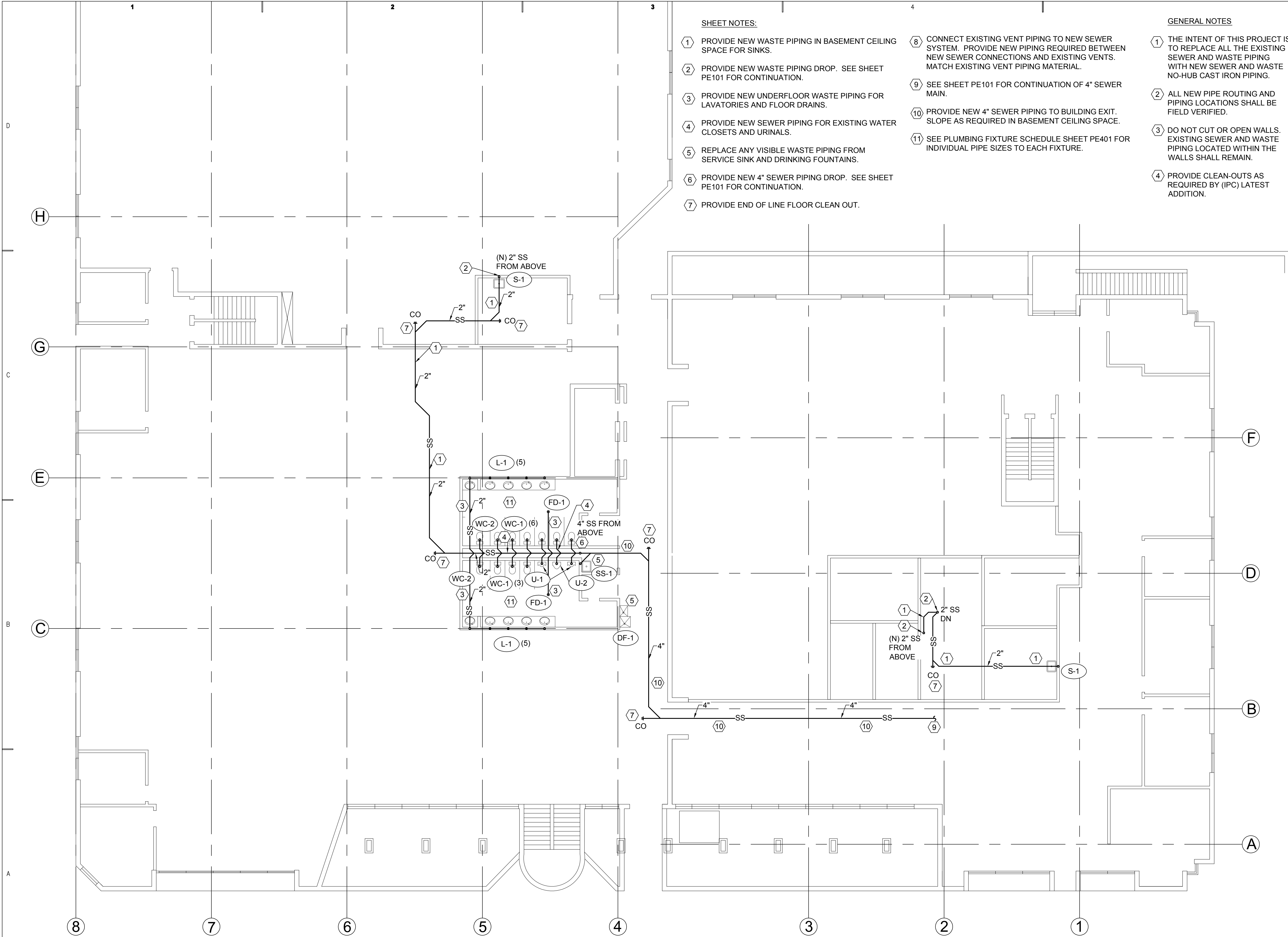
WHW JOB NO.:
05066

SHEET TITLE

PROFESSIONAL ENGINEER
06/12/06
WINWARD M.
PACKER
No. 375980
STATE OF UTAH

NEW PIPING
BASEMENT PLAN

SHEET NO.
PE101



SHEET NOTES:

- 1

PROVIDE NEW WASTE PIPING IN BASEMENT CEILING SPACE FOR SINKS.
- 2

PROVIDE NEW WASTE PIPING DROP. SEE SHEET PE101 FOR CONTINUATION.
- 3

PROVIDE NEW UNDERFLOOR WASTE PIPING FOR LAVATORIES AND FLOOR DRAINS.
- 4

PROVIDE NEW SEWER PIPING FOR EXISTING WATER CLOSETS AND URINALS.
- 5

REPLACE ANY VISIBLE WASTE PIPING FROM SERVICE SINK AND DRINKING FOUNTAINS.
- 6

PROVIDE NEW 4" SEWER PIPING DROP. SEE SHEET PE101 FOR CONTINUATION.
- 7

PROVIDE END OF LINE FLOOR CLEAN OUT.
- 8

CONNECT EXISTING VENT PIPING TO NEW SEWER SYSTEM. PROVIDE NEW PIPING REQUIRED BETWEEN NEW SEWER CONNECTIONS AND EXISTING VENTS. MATCH EXISTING VENT PIPING MATERIAL.
- 9

SEE SHEET PE101 FOR CONTINUATION OF 4" SEWER MAIN.
- 10

PROVIDE NEW 4" SEWER PIPING TO BUILDING EXIT. SLOPE AS REQUIRED IN BASEMENT CEILING SPACE.
- 11

SEE PLUMBING FIXTURE SCHEDULE SHEET PE401 FOR INDIVIDUAL PIPE SIZES TO EACH FIXTURE.

GENERAL NOTES

- 1

THE INTENT OF THIS PROJECT IS TO REPLACE ALL THE EXISTING SEWER AND WASTE PIPING WITH NEW SEWER AND WASTE NO-HUB CAST IRON PIPING.
- 2

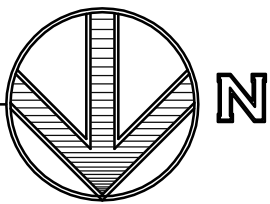
ALL NEW PIPE ROUTING AND PIPING LOCATIONS SHALL BE FIELD VERIFIED.
- 3

DO NOT CUT OR OPEN WALLS. EXISTING SEWER AND WASTE PIPING LOCATED WITHIN THE WALLS SHALL REMAIN.
- 4

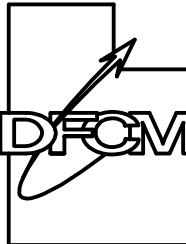
PROVIDE CLEAN-OUTS AS REQUIRED BY (IPC) LATEST ADDITION.

MAIN FLOOR PIPING PLAN

SCALE: 1/16" = 1'-0"



State of Utah
Department of Administrative Services



Division of Facilities
Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
Phone: (801) 538 - 3018
Fax: (801) 538 - 3267

Internet: <http://www.dfcu.state.ut.us>

CONSULTANTS



WHW
ENGINEERING INC.
PROFESSIONAL MECHANICAL ENGINEERING
1354 East 3300 South Suite 200
SALT LAKE CITY, UTAH 84106
(801) 466-4021, FAX 466-5536
EMAIL: excellence@whw-engineering.com

COPYRIGHT NOTICE

ALL RIGHTS RESERVED ©
WHW ENGINEERING, INC.
These documents are protected under the United States 1978 copyright act. It is an exclusive work of original authorship. None of the pictorial, graphic, or technical charts or drawings depicted may be reproduced by any method, mechanical, electronic, or otherwise; nor may they be used or re-used for any purpose without the express prior written permission of WHW Engineering, Inc.

PROJECT NAME & ADDRESS

**OFFICE OF EDUCATION
SANITARY EJECTOR
PUMPS & SEWER
PIPE REPLACEMENT**

DFCM No. 05258200

S.L.C., UTAH

MARK	DATE	REVISION
------	------	----------

PROJECT MANAGER:

SLW

DRAWN BY:

STAFF

CHECKED BY:

SLW

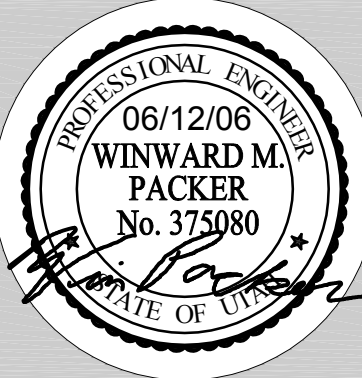
DATE:

06/12/06

WHW JOB NO.:

05066

SHEET TITLE



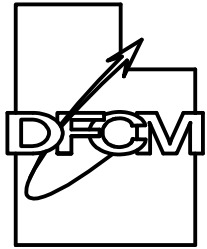
NEW PIPING MAIN
FLOOR PLAN

SHEET NO.

PE102




State of Utah
Department of Administrative Services



Division of Facilities
Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
Phone: (801) 538 - 3018
Fax: (801) 538 - 3267

Internet: <http://www.dfc.state.ut.us>



WHW
ENGINEERING INC.
PROFESSIONAL MECHANICAL ENGINEERING
1354 East 3300 South Suite 200
SALT LAKE CITY, UTAH 84106
(801) 466-4021, FAX 466-5536
EMAIL: excellence@whw-engineering.com

CONSULTANTS

COPYRIGHT NOTICE

ALL RIGHTS RESERVED ©
WHW ENGINEERING, INC.
These documents are protected under the United States 1978 copyright act. It is an exclusive work of original authorship. None of the pictorial, graphic, or technical charts or drawings depicted may be reproduced by any method, mechanical, electronic, or otherwise; nor may they be used or re-used for any purpose without the express prior written permission of WHW Engineering, Inc.

PROJECT NAME & ADDRESS

**OFFICE OF EDUCATION
SANITARY EJECTOR
PUMPS & SEWER
PIPE REPLACEMENT**

DFCM No. 05258200

S.L.C., UTAH

MARK	DATE	REVISION

PROJECT MANAGER:
SLW

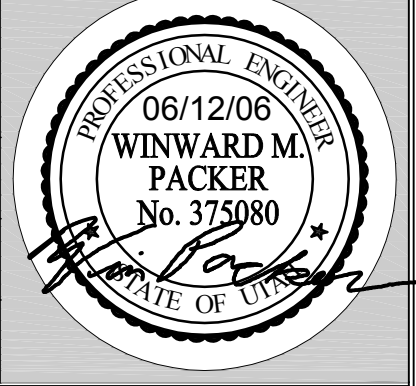
DRAWN BY:
STAFF

CHECKED BY:
SLW

DATE:
06/12/06

WHW JOB NO.:
05066

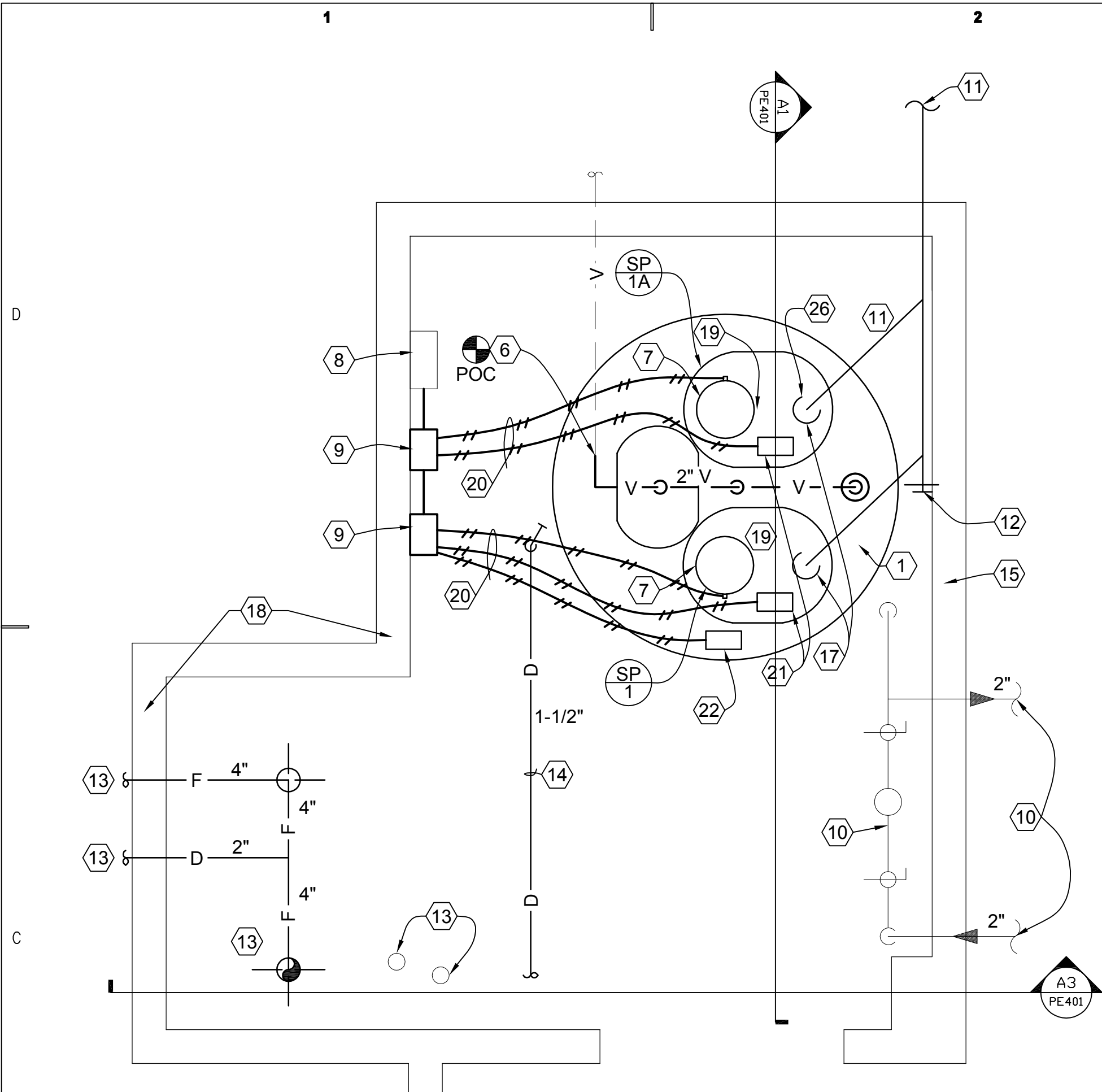
SHEET TITLE



NEW PIPING SECOND
FLOOR PLAN

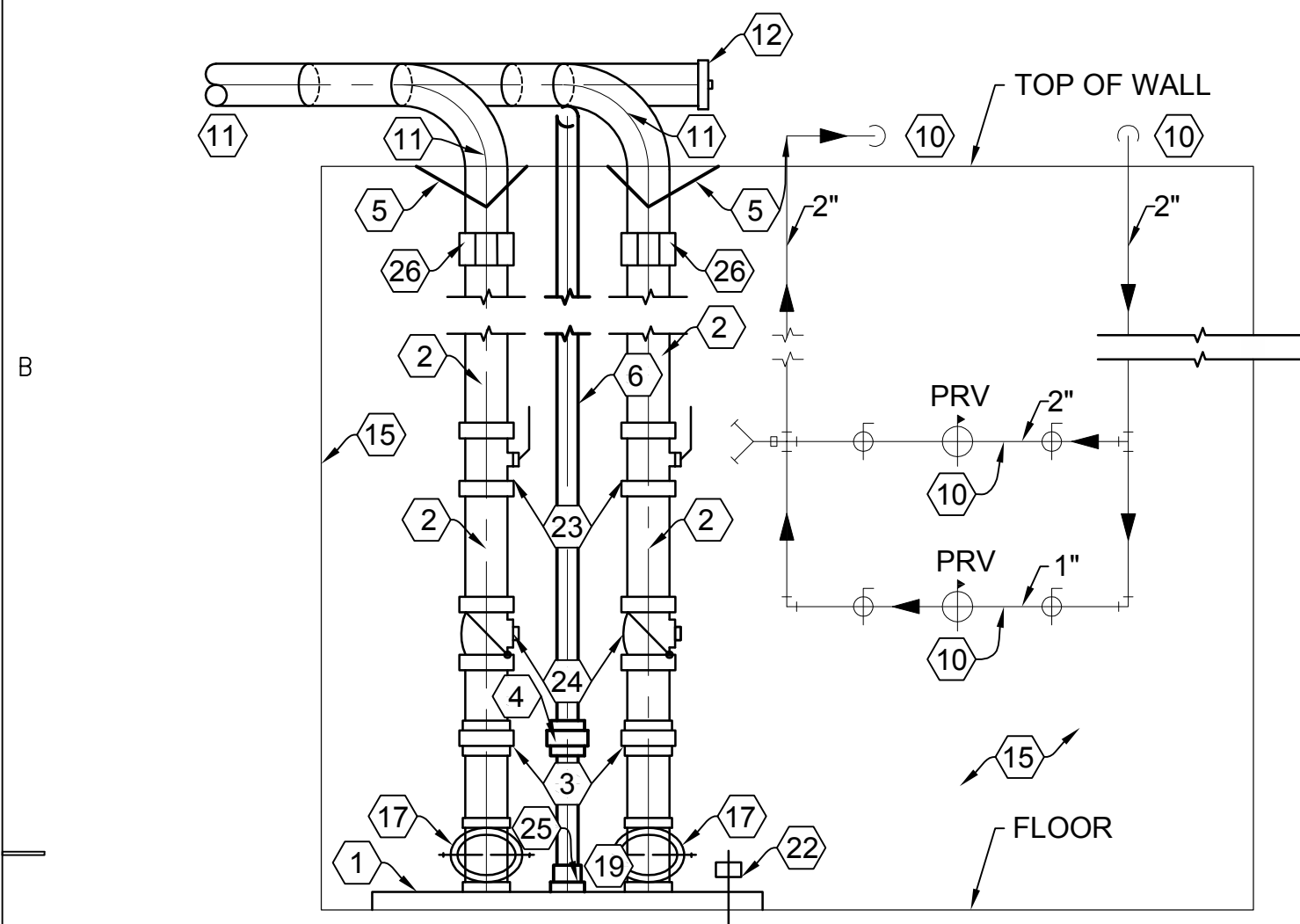
SHEET NO.

PE103



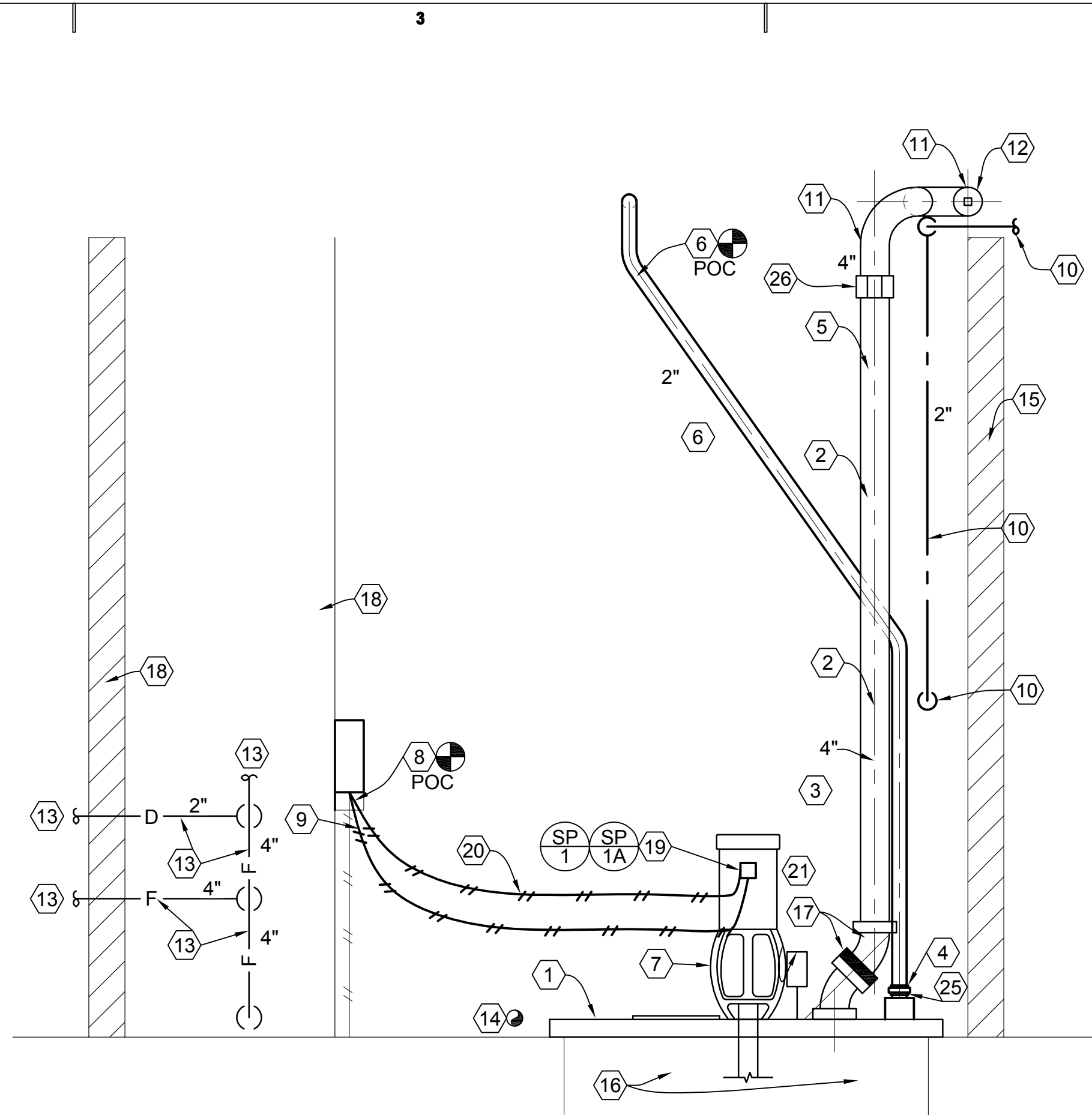
C1 BASEMENT SEWER EJECTOR ROOM PUMP PIPING PLAN

SCALE: 3/4" = 1'-0"



B1 BASEMENT SEWER EJECTOR ROOM PUMP PIPING SECTION LOOKING SOUTH

SCALE: 3/4" = 1'-0"



C3 BASEMENT SEWER EJECTOR ROOM PUMP PIPING SECTION-LOOKING EAST

SCALE: 3/4" = 1'-0"

PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	INDIVIDUAL LINE SIZES			REMARKS
		TRAP	WASTE	VENT	
WC-1	WATER CLOSET	4"	4"	2"	
WC-2	WATER CLOSET	4"	4"	2"	
U-1	URINAL	3"	3"	2"	
U-2	URINAL	3"	3"	2"	
L-1	LAVATORY	1-1/2"	2"	1-1/2"	
FD-1	FLOOR DRAIN	3"	3"	2"	
DF-1	DRINKING FOUNTAIN	1-1/2"	1-1/2"	1-1/2"	
S-1	SINK	2"	2"	1-1/2"	1-1/2"@ FIXTURE
SS-1	SERVICE SINK	3"	3"	2"	

PUMP SCHEDULE

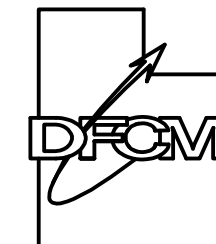
SYMBOL	TYPE	GPM	FT. HEAD	RPM	SUCTION SIZE	DISCHARGE SIZE	MOTOR		SIZE	SERVICE	COMMENTS	SCHEDULE NOTES
							V - Ø - Hz	HP				
SP 1 SP 1A	VERTICAL CENTRIFUGAL PUMP	125	20	1750	3" SOLIDS	4" FLANGED	460/3/60	2.0	4X4x7	SEWAGE EJECTOR	AURORA 632 FS	①②④⑤

- ALL PUMPS SHALL BE SIZED IN THE FLAT PART OF THE CURVE.
- SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.
- LENGTH OF PUMP. FEILD VERIFY - SEE NOTE #1 / PE401
- EXISTING SUMP PIT SHALL REMAIN.
- SUPPLY PUMP PACKAGE WITH LEVEL CONTROL FLOW SWITCH, HIGH LEVEL ALARM AND ALTERNATOR.

SHEET NOTES

- PROVIDE NEW SUMP COVER TO FIT EXISTING SUMP. COVER SHALL FIT AIR TIGHT OVER EXISTING SUMP. CONTRACTOR AND SUPPLIER SHALL FIELD VERIFY EXACT SIZE OF EXISTING SUMP DEPTH AND COVER DIAMETER.
- PROVIDE NEW 4" GALVANIZED DISCHARGE PIPING
- PROVIDE 4" GALVANIZED UNION.
- PROVIDE 2" GALVANIZED UNION.
- RE-USE EXISTING SEISMIC CABLE FOR SUPPORTING PIPING AT TOP OF RISERS.
- PROVIDE NEW 2" GALVANIZED VENT PIPING - CONNECT TO EXISTING 2" VENT LINE AT THIS LOCATION.
- PROVIDE NEW SEWAGE EJECTOR PUMPS. SEE SCHEDULE FOR CAPACITIES THIS SHEET.
- EXISTING DISCONNECT SHALL REMAIN.
- PROVIDE NEW PUMP STARTERS. AUTO-OFF HAND WITH RED LIGHT RUN STATUS.
- EXISTING CULINARY WATER PRV STATION AND PIPING SHALL REMAIN.
- PROVIDE NEW 4" CI PIPING. SEE SHEET PE101 FOR CONTINUATION.
- PROVIDE NEW END OF MAIN CLEAN-OUT.
- EXISTING FIRE SPRINKLING RISERS, PIPING, ETC. SHALL REMAIN. PROTECT DURING CONSTRUCTION.
- SPRINKLER DRAIN LINE SHALL BE REMOVED DURING CONSTRUCTION AND REPLACED AFTER NEW SUMP COVER AND PUMPS ARE INSTALLED.
- EXISTING SHEET ROCK INTERIOR WALL NOT FULL HEIGHT.
- EXISTING SUMP TO REMAIN.
- PROVIDE 4" 125# COMPANION FLANGE CONNECTION WITH 4" SCREWED FITTING ON OUTLET OF FLANGE.
- EXTERIOR WALL.
- PROVIDE NEW DUPLEX SEWAGE EJECTOR PUMPS, COVER, CONTROLS, ETC.
- PROVIDE NEW LIQUID TIGHT 3/4" FLEX CONDUIT TO NEW PUMP CONNECTIONS.
- NEW FLOAT LEVEL CONTROLLER FLOW SWITCH SHALL BE PROVIDED WITH PUMP PACKAGE, INSTALL PER MANUFACTURER'S INSTRUCTIONS.
- PROVIDE NEW HIGH LEVEL ALARM WITH PUMP PACKAGE. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
- PROVIDE NEW 4" SCREWED BALL VALVE - CAST BRONZE - KITZ CODE #58 AKSZA OR LUG TYPE 4" BUTTERFLY VALVE WITH COMPANION FLANGES MAY ALSO BE USED. KITZ-150 PSI DJ SERIES, DUCTILE IRON WITH LEVER OPERATOR.
- PROVIDE NEW 4" SCREWED CHECK VALVE - KITZ CLASS 125 - BRONZE T PATTERN SWING. CODE #04AKR.
- PROVIDE 4" X 2" REDUCER.
- PROVIDE 4" GALVANIZED TO 4" CAST IRON CONNECTION.
- EXISTING 2" VENT PIPING. SEE SHEET PE101 FOR CONTINUATION.

State of Utah
Department of Administrative Services



Division of Facilities
Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
Phone: (801) 538 - 3018
Fax: (801) 538 - 3267

Internet: <http://www.dfcu.state.ut.us>

CONSULTANTS



WHW
ENGINEERING INC.
PROFESSIONAL MECHANICAL ENGINEERING
1354 East 3300 South Suite 200
SALT LAKE CITY, UTAH 84106
(801) 466-4021, FAX 466-5536
EMAIL: excellence@whw-engineering.com

COPYRIGHT NOTICE

ALL RIGHTS RESERVED ©
WHW ENGINEERING, INC.
These documents are protected under the United States 1978 copyright act. It is an exclusive work of original authorship. None of the pictorial, graphic, or technical charts or drawings depicted may be reproduced by any method, mechanical, electronic, or otherwise; nor may they be used or re-used for any purpose without the express prior written permission of WHW Engineering, Inc.

PROJECT NAME & ADDRESS

OFFICE OF EDUCATION
SANITARY EJECTOR
PUMPS & SEWER
PIPE REPLACEMENT

DFCM No. 05258200

S.L.C., UTAH

MARK	DATE	REVISION

PROJECT MANAGER:

SLW

DRAWN BY:

STAFF

CHECKED BY:

SLW

DATE:

06/12/06

WHW JOB NO.:

05066

SHEET TITLE

LARGE SCALE EJECTOR
ROOM PIPING
PLAN AND SECTIONS

SHEET NO.

PE401

1

2

3

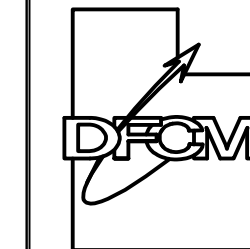
4

SHEET NOTES

- 1 PROVIDE NEW ELECTRICAL NEMA SIZE 1 STARTERS FOR NEW SEWER EJECTOR PUMPS. MOUNT IN SAME LOCATION AS EXISTING REMOVED STARTERS.
- 2 ROUTE NEW 4" GALVANIZED PIPING TO POINT ABOVE BALL VALVE. INSTALL 4" CAST IRON NO-HUB FROM THIS POINT TO BUILDING EXIT.
- 3 PROVIDE NEW 3/4" LIQUID TIGHT FLEXIBLE CONDUIT. WIRING FOR MOTORS SHALL BE 3# 12 COPPER WIRES.
- 4 PROVIDE NEW CONNECTIONS TO NEW PUMPS AND NEW LEVEL CONTROLLERS. INSTALL IN ACCORDANCE WITH NEC 2005.
- 5 PROVIDE NEW LEVEL CONTROLLERS WITH NEW PUMP PACKAGE. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 6 PROVIDE NEW HIGH LEVEL ALARM IN THE LOCATION INDICATED ON THE NEW SUMP COVER.
- 7 WALL OF EXISTING SEWER SUMP.
- 8 PROVIDE 4" -125# COMPANION FLANGE WITH 4" SCREWED FITTING ON OUTLET OF FLANGE.
- 9 PROVIDE NEW 4" PUMPED SEWER LINE FROM NEW PUMPS TO PIPING CONNECTION AT EXISTING PUMPED SEWER LINE AT BUILDING EXIT.
- 10 CONNECT NEW 4" PUMPED PIPING FROM NEW SEWAGE PUMPS TO EXISTING 4" SANITARY SEWER AT BUILDING EXIT. FIELD VERIFY LOCATION OF CONNECTION AND EXISTING CONDITIONS.
- 11 PROVIDE NEW SEWER EJECTOR PUMPS AND COVER. RE-USE EXISTING SEWAGE SUMP. FIELD VERIFY SIZE AND DEPTH OF PIT BEFORE ORDERING NEW PUMPS.
- 12 PROVIDE NEW 4" GALVANIZED PIPING.
- 13 PROVIDE NEW 4" CAST IRON NO HUB PIPING AND CLEAN-OUTS.
- 14 EXISTING POWER SOURCE SHALL REMAIN.
- 15 EXISTING DISCONNECT SHALL REMAIN.
- 16 PROVIDE PUMP STARTERS WITH AUTO-OFF-HAND, AND WITH RED LIGHT RUN STATUS.

State of Utah

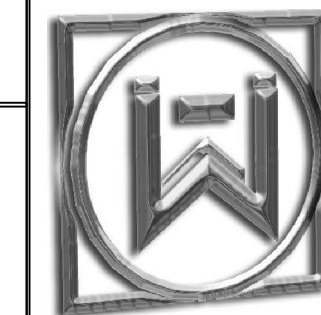
Department of Administrative Services



Division of Facilities
Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
Phone: (801) 538 - 3018
Fax: (801) 538 - 3267

Internet: <http://www.dfc.state.ut.us>

CONSULTANTS



WHW
ENGINEERING INC.
PROFESSIONAL MECHANICAL ENGINEERING
1354 East 3300 South Suite 200
SALT LAKE CITY, UTAH 84106
(801) 466-4021, FAX 466-5536
EMAIL: excellence@whw-engineering.com

COPYRIGHT NOTICE

ALL RIGHTS RESERVED ©
WHW ENGINEERING, INC.
These documents are protected under the United States 1978 copyright act. It is an exclusive work of original authorship. None of the pictorial, graphic, or technical charts or drawings depicted may be reproduced by any method, mechanical, electronic, or otherwise; nor may they be used or re-used for any purpose without the express prior written permission of WHW Engineering, Inc.

PROJECT NAME & ADDRESS

**OFFICE OF EDUCATION
SANITARY EJECTOR
PUMPS & SEWER
PIPE REPLACEMENT**

DFCM No. 05258200

S.L.C., UTAH

MARK	DATE	REVISION
------	------	----------

PROJECT MANAGER:
SLW

DRAWN BY:
STAFF

CHECKED BY:
SLW

DATE:
06/12/06

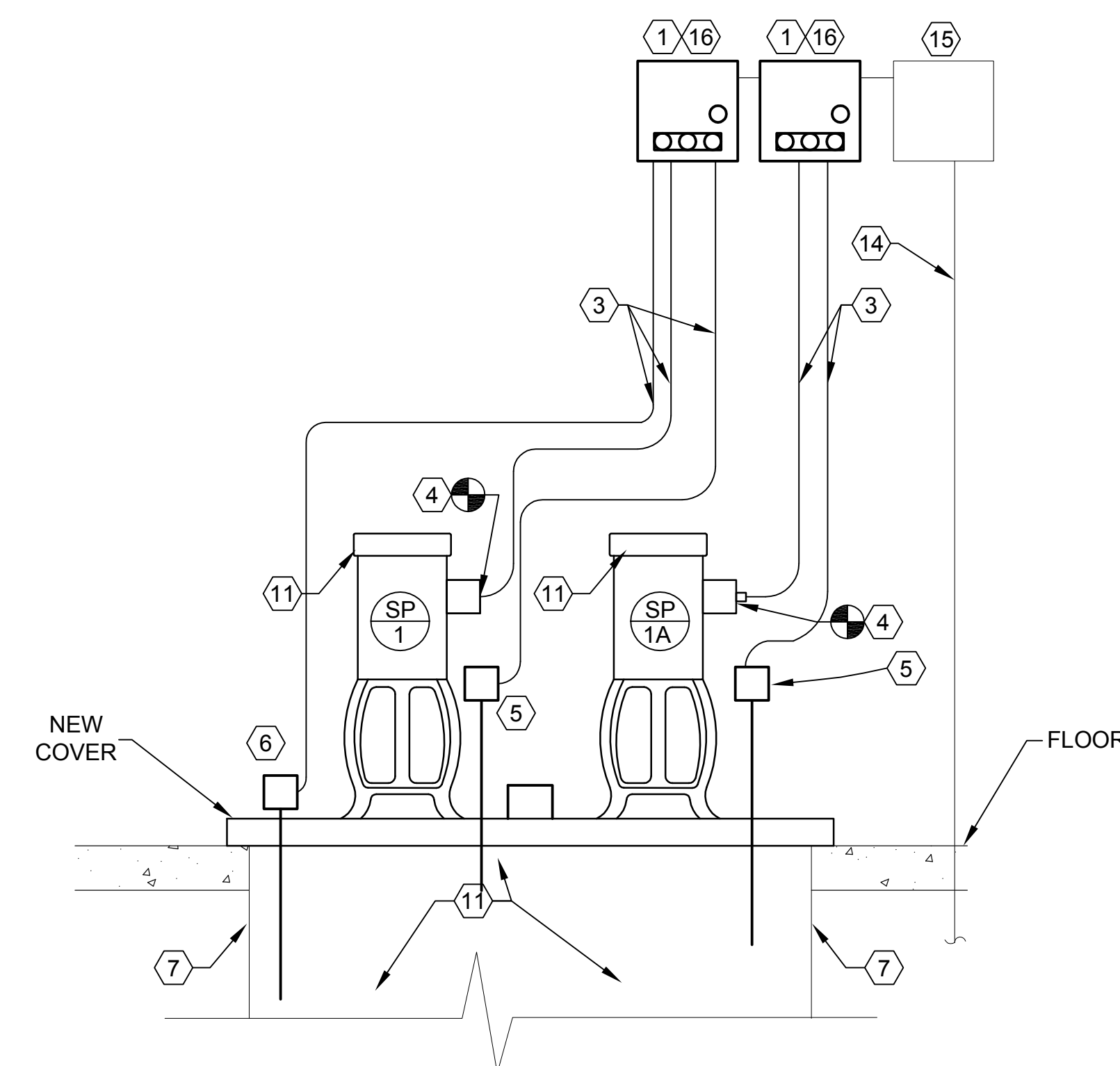
WHW JOB NO.:
05066

SHEET TITLE

SEWER PIPING
AND ELECTRICAL DETAILS

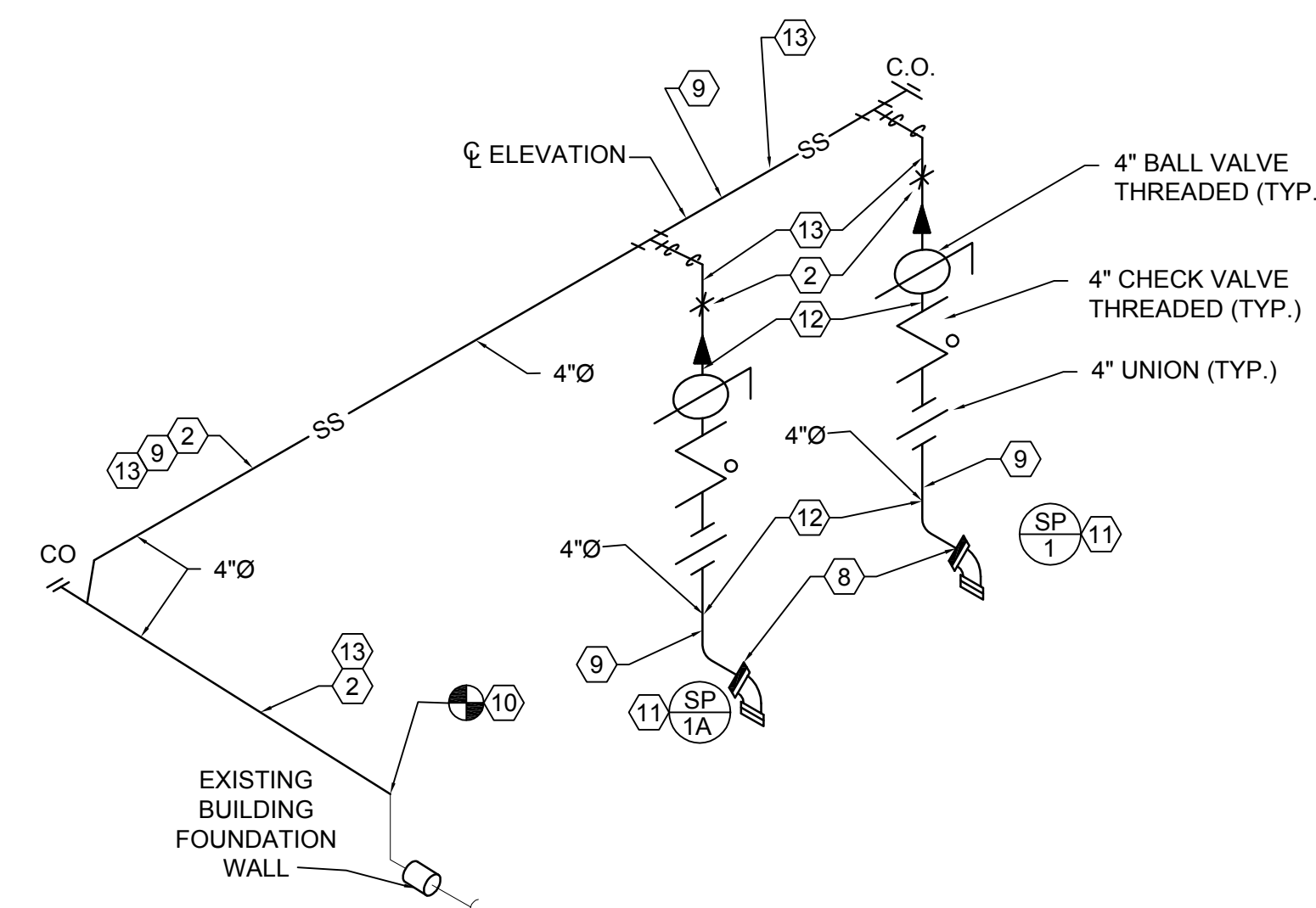
SHEET NO.

PE501



B1 ELECTRICAL AND CONTROL DIAGRAM

SCALE: 1" = 1'-0"



B4 SEWER DISCHARGE PIPING - PUMPS CP1A & CP1B

SCALE: NONE

